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# Adolescents' perceptions of how creativity is fostered by teachers in the curriculum

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# *Adolescents' perceptions of how creativity is fostered by teachers in the curriculum*

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To family, near and far. Inspirational and loving.

To Dr. Mary Hayden and Dr Sue Martin. Wise and understanding.

To the school, adolescents and teachers. Generous and insightful.

# Abstract

There are repeated calls and efforts to promote creativity more in schools. In this regard, the key role of teachers in developing creative learning environments has become well recognised. In discussions about how teachers can do this, creativity researchers have occasionally consulted young children for their perceptions of how creativity can be encouraged but have rarely consulted adolescents. This study aims to add adolescents' views and experiences to the agenda of how we can foster their creativity in schools.

Using Straussian grounded theory, I adopted a case study approach to understand adolescents' perceptions of how creativity was fostered by teachers in the curriculum. The research is set in a highly-regarded international school in central Europe. I consulted 14 to 16-year-old adolescents studying in the final two years of the International Baccalaureate (IB) Middle Years Programme (MYP). I also consulted their teachers on themes that the adolescents found relevant. The purpose of the study is encapsulated by the three research questions 'how do adolescents define creativity?', 'how do adolescents perceive creativity being encouraged by teachers?' and 'between adolescents, teachers and researchers, how aligned are beliefs about fostering creativity in the classroom?'.

Participants shared their perceptions through online questionnaires, focus groups, online discussion forums, individual and paired interviews, and emails. Through ongoing data collection and analysis, four main categories of creativity-fostering teaching practices emerged. These were disciplinary relevance (D), student empowerment (E), personal and social relevance (R), and creative metacognition (M), all interrelated through the core category 'shaping boundaries'. This categorisation led directly to the development of what I called the 'DERM model' that aims to provide teachers with guidance for fostering creativity in the classroom. This model reflects the beliefs of adolescents which shared many similarities with those of teachers and creativity researchers.

# Chapter 1: Introduction

## 1.1 Background

I started teaching adolescents nearly 30 years ago, and since then I have spent most of the time working in international schools, where I have had considerable freedom to choose what to teach and how to do so. Inevitably, I tried new things. I cluttered every available classroom space with children's constructions and posters, and used the school corridors when wall space ran out. I invented many teaching resources, fuelled by a suspicion of textbooks and a desire to see children excited about learning at deep levels. I smiled to myself when a teacher walked into the classroom and couldn't find me in the hopeless chaos because of course, I saw it as anything but. I did not always get it right, and some initiatives are best forgotten. A few were surprising successes. I was not atypical among my colleagues. As with many of them, I was probably influenced by a gradual rise of interest in, among other student-empowering themes, creativity in schools.

Today, creativity receives intense attention by educational policy makers worldwide (Newton & Newton, 2014; Runco, 2016), although putting policy into practice and successfully fostering creativity seems to have had limited success in many countries, partly due to the continued use of incompatible teaching methods (Tran et al, 2016). I have seen school leadership wanting to encourage creativity (even if it was at moderate levels), but some teachers could not adapt their teaching accordingly. However, even when encouraging creativity in principle, I have also seen school leaders reluctant to accept teaching approaches which attempt to foster it. Sometimes these tensions never got fully resolved, and everyone involved acted as before, doing what they thought best and for the most part ignoring the doubters. While I feel fortunate to have worked in collaborative and innovative schools, I have found misalignment of beliefs between educators common within them. To enlighten these and other debates, I have for a long time believed it worthwhile listening to what young people say about their classroom experiences and schooling in general. I think I have learned more about improving my teaching practice from students, whether through anonymous surveys or conversations, than from standard teacher

appraisal systems. What young people say can hurt, but it would be foolish to avoid consulting them for that reason. I think it is misguided to dismiss advice from a young person who is in your company for so many hours of the week.

As well as my interests in international schools, creativity and student consultation, I particularly enjoy teaching adolescents, defined as a person aged between 10 and 19 (World Health Organisation, 2016). I often say that I like teaching this age group because they are the only ones who laugh at my jokes. For whatever reason, I feel adolescents bring out the very best of me as a teacher. Most of my international school experiences have been in schools implementing International Baccalaureate (IB) programmes, and I have purposefully focussed most of my teaching and leadership in the IB Middle Years Programme (MYP) which caters for adolescents aged 11 to 16.

This backdrop of interests and experiences helped lead me to this research investigation of adolescents' perceptions of how creativity is encouraged by teachers in the curriculum. Also, it became apparent in the literature that there has been relatively little attention devoted to understanding adolescent creativity, despite this phase being associated with rapid cognitive development (Kleibeuker et al, 2016). Much research on creativity in young people has targeted children in early Primary or undergraduates in university. In creativity research on young people, there has also been an emphasis on psychometric testing and comparing these measurements with factors such as academic performance, academic motivation, family backgrounds and personal characteristics. In the context of international schools, there has been little research in creativity for any age group. These gaps further motivated me to choose the line of inquiry.

## 1.2 Purpose of research

The purpose of the research was to inform educators of the practices within schools that made young people feel their creativity was being fostered. I consulted adolescents in an international school for their views on this. I also consulted their teachers on themes that the adolescents found relevant. By connecting these views

with other related research, I hoped to give practical advice to teachers in the school and, albeit more tentatively, to other teachers working in broadly similar contexts. The purpose of the study is encapsulated by the three research questions applied:

1. How do adolescents define creativity?
2. How do adolescents perceive creativity being encouraged by teachers?
3. Between adolescents, teachers and researchers, how aligned are beliefs about fostering creativity in the curriculum?

The central purpose of question 1 was to understand adolescents' frame of reference when discussing creativity. Instead of seeking a common definition through one or a few sentences, I sought common elements that adolescents believed creativity consisted of (six emerged). Question 2 was the main thrust of the study and aimed to reveal teaching strategies perceived by adolescents to foster their creativity. The third question aimed to identify strategies that had widespread buy-in from the three constituents, and those that did not.

While research may be lacking in adolescent creativity, there is broad consensus that teachers play a very significant role in developing creativity-fostering classroom environments (Sawyer, 2012). The creativity literature indicates the importance of teacher attributes, classroom design, and pedagogical strategies that emphasise areas such as developing an open-minded culture of learning and helping young people manage uncertainties. This study aimed to bring a perspective, that of adolescents, to this consensus.

Listening attentively to what adolescents say reveals what gives meaning to their lives and actions. Such revelations not only provide educators with fresh perspectives but also provide opportunities for young and old to connect and understand each other in meaningful ways so that they feel engaged in each other's presences. I also assumed that if adolescents believe they are being creative, then they are more likely to be so.

## 1.3 Setting and research approach

The setting was a highly regarded international school in central Europe which implements the MYP alongside two other IB programmes, the Primary Years Programme (PYP) and Diploma Programme (DP), catering for students aged 3 to 11 and 16 to 19 respectively. I have used the pseudonym Central Europe International School (CEIS) for the setting of this case study. I consulted adolescents who were in the final two years of MYP (aged 14 to 16 years) and their teachers.

I adopted a grounded theory approach. I believed this offered an encouraging framework for adolescents to direct the research so that findings were likely to be authentic and applicable. It was a qualitative study in which participants shared their perceptions through online questionnaires, focus groups, individual and paired interviews, online discussion forums, and emails. After piloting and processing consent forms, the main period of data collection was from January 2016 to June 2016, although I continued to collect data in the form of emails from participants, especially in response to a summary of the findings I sent them in October 2016.

## 1.4 Organisation of thesis

I highlight in chapter 2 those aspects from the literature which have special relevance to the context and findings of the study. In chapter 3, I attempt to justify my research approach and this is followed in chapter 4 by a presentation and analysis of the findings. In the fifth and final chapter, I synthesise the findings and implications of the study, discuss the study's limitations, and suggest areas for future research.

# Chapter 2: Literature Review

## 2.1 Introduction

This chapter gives a brief and selected overview of the literature as it relates to the study. As is customary in grounded theory research, this full literature review was developed after data collection and analysis had occurred because it was only then that I was aware of the relevant concepts brought to the study (Corbin & Strauss, 2015). I start the review by introducing the multifaceted nature of creativity and the different degrees that a creative product can have impact. This is followed by an overview of creativity-fostering classroom practices that researchers have suggested for teachers. I then briefly describe the nature of international schools and give an overview of the curriculum that the adolescents and teachers were following at CEIS. Finally, I present a short synopsis of student voice and on how consulting young people can help improve teaching and learning in schools.

## 2.2 The nature of creativity

### *2.2.1 Rhodes' 4Ps of creativity*

Creativity seems to be a relatively new English word, its first documented use being in the 1870s (Kampylis & Valtanen, 2010), and it is only recently that scholars seem to agree what it means.

Mel Rhodes tried to find clarity to multiple definitions of creativity published up to the early 1960s, and suggested that these varied according to four emphases, namely *person*, *process*, *press* (i.e. the environment) and *products*, commonly referred to as the 4Ps of creativity (1961). Rhodes was careful to clarify that these four strands, while distinct, were all interrelated (unfortunately, he did not describe how) and together gave a holistic view of creativity (1961). Other Ps have been subsequently added such as *persuasion* (Simonton, 1995) and *potential* (Runco, 2003), the latter been seen by Runco as particularly relevant to educational settings and young people, and links directly with personal or mini-c creativity discussed in section 2.3.

Simonton's 'persuasion' also has relevance to this study in that young people reported that they had to persuade others, including teachers, that their ideas and products were of value. While I use the original 4P framework as a tool to describe the multifaceted nature of creativity, these additional Ps add further conceptual understanding of what creativity represents. I now discuss the 4Ps in a brief historical overview of creativity research before introducing a holistic view of creativity.

### *2.2.2 History of creativity research*

Research on creativity can be traced back to the late 19th century where the focus was on 'genius' (Craft, 2001). The 1950s saw an interest, especially in North America, on the psychological dimensions of creativity and so began an era of testing creativity and fostering it in multiple contexts (Craft, 2001), including within education (Torrance, 1963). During this early phase, the emphasis was on the person. This is no surprise given that it was commonly understood, even up to the 1970s, that a person was either born creative or not (Amabile & Pillemer, 2012). As it became increasingly popular towards the end of the 20th century to view creativity as something accessible to everyone, researchers began to examine the traits of adults and young people who, while not considered eminent, demonstrated high levels of creativity.

Parallel with this research on non-eminent creative people, was an effort to distinguish between different levels of everyday creativity and consequently there was a surge of interest in strategies and tests to judge the creative quality of everyday products (Amabile & Pillemer, 2012; Simonton, 2006). Creativity began to be increasingly associated with the product, rather than with the person, and this central aspect of creativity continues today with most definitions taking the creative product as its distinguishing feature (Glăveanu, 2014). It has now become acknowledged that a creative product can be an idea, object, problem solution, action, and confusingly can even describe an organisation or place (for example, the creative classroom) (Craft, 2005; Hennessey & Amabile, 2010; Kaufman and Sternberg, 2007). Among academics in all disciplines, there appears to be universal agreement that a creative product has the two main features of novelty and value, and creativity is

defined as thus (Kaufman & Beghetto, 2014; Lau, 2011; Stein, 1953; Sternberg & Lubart, 1999).

For educators to develop creativity in young people, an understanding of the creative process is helpful. Going against the tide of research into people, Wallas' attempt in 1926 to answer this question has become influential, if not foundational, in recent creativity research with many continuing to use it as their "conceptual anchor" for describing the creative process (Glăveanu, 2014; Sadler-Smith, 2015: 342). Called Wallas' four-stage model, it describes how the creative process moves from *preparation*, *incubation*, *illumination* to *verification* (Wallas, 1926 in Sadler-Smith, 2015). Wallas' model has been inspirational for other stage descriptions of the creative process. For example, Sawyer suggests that his 8-stage model of the creative process (ask**,** learn**,** look**,** play**,** think**,** fuse**,** choose**,** make) helps explain how creative people act even for minor tasks (2012). They use all eight stages in whatever order works for them (even in reverse order), allow the stages to overlap and cycle repeatedly, are sensitive to ongoing feedback between the stages, and sometimes even apply different stages simultaneously (Sawyer, 2012; 2013).

Although it is an uncommon word to use today, Rhodes used the word 'press' to describe "the relationship between human beings and the environment" (1961: 308). It refers to pressures that influence creative people and their creative processes (Runco & Pagnani, 2011). Press was emphasised in this study. For schools, it is very closely tied in with physical layout, availability of resources and the culture of teaching and learning. Amabile summarised, in a review of nearly 7000 creativity studies, that it was "exceedingly rare" (1983: 358) for research to focus on the interaction of press with all of people, process and product. While there were indeed studies which examined the effects of certain physical or social environments on creativity, these often referred to eminent creators (Amabile, 1996), or alternatively these effects were benchmarked against creativity test scores (such as Klein, 1975). In the 1980s, critiques of the validity and reliability of these 'pen and paper' creativity tests became widespread (Amabile, 1983; Hocevar, 1981; Sternberg, 1988; Weisberg, 1986) and continue to be (Runco, 2016; Sawyer, 2010) although the use of multiple and diverse testing methods have been widely suggested to add rigour (Cropley, 2000; Lubart et al, 2007). Amabile pioneered a new wave of creativity research which

continues today on social-environmental forces which focused on the interactions between person, process and product, with the 1990s seeing this framework for research extended to educational circles (Craft, 2001).

### *2.2.3 A more unified approach to creativity*

Ivcevic, while recognising its circular and unspecific description, sees the merit of viewing creativity as "a product of the creative process done by a creative person" (2009: 17). This reflects a view of creativity as complex with many interacting components, and several models have been suggested to explain these interactions such as those of Amabile (1996), Runco and Chand (1995) and Sternberg and Lubart (1991). These all emphasise knowledge, creative thinking and motivation, and I will look more at Amabile's well-known and influential model since it seems to best relate to the findings. Sternberg and Lubart's investment theory emphasised how creative people buy low and sell high (1991), while Runco and Chand placed extra focus on the creative process (1995), and these emphases on persuasion and process respectively seemed less relevant to the adolescents at CEIS.

Amabile's *componential theory of creativity* is an integrative model of the social and psychological components that are conducive to the creative process (1996). This theory consists of three within-individual components (domain-relevant skills, creativity-relevant processes and intrinsic task motivation) and one external component (the social environment) that interact with each other in any creative act (1996). The theory is inclusive of everyday and eminent creativity as well as being applicable across all disciplines (1996).

The first of Amabile's individual components, *domain-relevant skills*, refers to factual knowledge, technical skills and any special talents developed in the domain (1983; 1996). They describe how background knowledge and skills describe the person's "network of possible wanderings" for being creative (Newell & Simon, 1972: 82, in Amabile, 1983). For educators, it means that disciplinary knowledge is key for creativity. The second component, *creativity-relevant processes* (originally called 'creativity-relevant skills'), describes a wide gamut of appropriate personality dispositions and cognitive styles (such as an appreciation of complexity, comfort with

ambiguity, keeping responses open for as long as possible, suspending judgment, and being able to delay gratification), implicit or explicit knowledge of heuristics (such as knowing ways to play with ideas or learning strategies to come up with counterintuitive, productive ideas), and work style (such as being able to concentrate for extended periods of time, perseverance, and keeping high levels of energy and productivity) (Amabile, 1983; 1996). This component places importance to teaching and encouraging these cross-disciplinary skills in schools. The third component, *task motivation*, is an extension of one creativity-relevant process, namely the tendency to be independent with thinking and to not easily conform to conventional thinking or other social pressures (1996). Amabile distinguished between two types of task motivation, intrinsic and extrinsic, with the former conducive to creativity and the latter tending to, but not always, discourage it (1996). Whether intrinsic or extrinsic, task motivation includes two aspects - a person's attitude to a task (which is influenced largely by personal interests) and a person's perception of the reasons for doing a task (which is influenced largely by external social and environmental factors) (Amabile, 1996).

These three individual components, domain-relevant skills, creativity-relevant processes and intrinsic task motivation together predict the quality of a creative performance. This performance is obviously shaped by the social environment, the fourth and only external component of the theory. The social environment describes those features of the environment (such as physical layout, the atmosphere of collaboration, openness to unusual ideas, and autonomy) which encourage and discourage this creative performance (Amabile, 1996). Amabile's framework places emphasis on how the environment's extrinsic motivators (such as rewards and praise) can undermine intrinsic motivation (1996).

### *2.2.4 A definition of creativity*

While participants' perceptions of creativity are central to this study rather than my own, I will present a definition to help clarify the discussions within this and the next chapter. In doing so, I am influenced by the findings of this study and with definitions suggested in the literature. I find Sawyer's individualist and sociocultural definitions

for creativity helpful for defining creativity in an educational context (2012). His individualist definition focuses on structures and processes associated with a single person, in isolation from those around, and this definition states that "creativity is a new mental combination that is expressed in the world" (2012: 7). Sawyer stresses that this expression can be new only to the creator (2012). The sociocultural definition, which focuses on social impact, is that "creativity is the generation of a product that is judged to be novel and also to be appropriate, useful, or valuable by a suitably knowledgeable social group" (2012: 8). These two definitions together highlight different degrees of creativity as well as its two central elements of novelty and value.

I therefore offer a simple definition that *creativity is the generation of something novel and of value*. Creativity writers have used other similar terms for 'novel' such as 'unexpected' (Kaufman & Baer, 2004), 'unique' (Rogers, 1954 in Kampylis & Valtanen, 2010) and 'original' (Newton & Newton, 2014). 'Unique' and 'original' strike me as too ambitious for everyday creativity, the type of creativity which is the focus of this research. 'Unexpected' seems to emphasise the impact rather than the value of the product; wearing something unexpected does not equate to wearing something commonly perceived as having value (such as attaching mini-umbrellas to your knees). 'Novel', on the other hand, is a broad description that can be seen from a global, local or personal perspective. The second characteristic, 'of value' is favoured over 'useful' (as well as by Sawyer, this was suggested by Stein, 1953) and 'appropriate' (also Sternberg & Lubart, 1999; Weiner, 2000), the former arguably losing sight of aesthetics and emotional impact, while the latter possibly diverting attention to the ethical implications of the product, a potentially divisive judgement. 'Of value' (rather than 'valuable' which often implies a monetary dimension) is a common word across disciplines, and like 'novel' has a broad spectrum of products that it can apply to in terms of their nature (idea, action, solution or object), quality (high relative to the personal, local or global) and applicability (personal, local or global). The word 'generation' emphasises the active processes associated with creativity, and how they can occur quite quickly or slowly in few or many phases. It is more action-orientated than for example 'ability' in the commonly referenced definition that creativity is "the ability to produce work that is both novel . . . and appropriate" (Sternberg & Lubart, 1999: 3). In addition, my use of 'something' seems

more inclusive of the products of young people than for example 'work' which has an adult-oriented dimension.

## 2.3 The creativity spectrum

Something which is novel and of value is not necessarily a rare phenomenon. To categorise creativity in more accessible terms, it has become common for creativity researchers to distinguish between two levels of creative accomplishment – eminent or *Big-C* creativity and everyday or *little-c* creativity (Stein, 1987 in Merrotsy, 2013). Big C creativity, the rarer of the two, has a wider sociocultural impact (Sawyer, 2012) where its products are valued by society at large or by an influential group (such as medical doctors, professional musicians or educators) (Csikszentmihalyi & Nakamura, 2014). Little-c creativity is more inclusive and even includes any product that is new and useful only to the creator; other people do not have to know about it or value it (Stein, 1987 in Merrotsy, 2013; Sawyer, 2012). Little-c also includes creations which have a significant impact on society but are not considered revolutionary on a macro scale. On a historical timeframe, little-c fails to get noticed or adopted by the culture whereas Big-C does (Csikszentmihalyi & Nakamura, 2014). Cultural evolution arises from Big-C creativity and personal enrichment from little-c. In the context of creativity in young people, the categorisation of little-c creativity helps enable educators to see and influence the development of creativity.

However, the little-c/Big-C framework does not offer a useful categorisation to distinguish between student A who sometimes comes up with new possible ways to solve a simple problem but struggles to follow through with them, and student B who consistently impresses others with how solutions are developed and applied to the school at large. Student B may have come up with a way for people in the school to connect with disadvantaged members of the local area through offering a swimming course, and has followed through with this idea to establish a long-running programme involving workers and students from both communities. How do we help move student A to be more like student B? What next level of creativity can student A aspire to before making the leap to act like student B? And what about student B – is exclusive Big-C the only available step in their creative development if we are to

apply a theoretical framework? Beghetto and Kaufman realised these difficulties and in response reconceptualised the little-c and Big-C creativity framework to suggest mini-c, little-c, Pro-c and Big-C levels of creativity to develop their Four C model of creativity (Beghetto & Kaufman, 2007; Kaufman & Beghetto, 2009). Thus, the original little-c is divided into three stages, and Big-C remains associated with eminence and wide social acclaim. Kaufman and Beghetto also reconceptualised the natural development of creativity from beginner to world expert (2009).

Mini-c is similar to the notion of 'personal creativity' suggested by Runco (1996) in that it encompasses creations of new personal knowledge and understanding but which are not judged as novel or valuable by others. Little-c, the next stage of creative development, involves products that are shared and valued by others within a narrow context. The next stage, Pro-C creativity, represents professional level expertise and indicates recognition at a professional and wider societal level (Kaufman & Beghetto, 2009). Finally, we have Big-C creativity which is reserved for those products that are well known and influential within a field, and their elite status might even transcend across disciplines to revolutionise our ways of thinking and being.

Kaufman & Beghetto emphasise that their Four C model represents "a developmental trajectory of creativity in a person's life", and there are similarities in the creative processes of all Cs (2009: 6). Nevertheless, many creativity researchers are unsure whether there is one general creative process (Mumford & Antes, 2007, in Hennessey & Amabile, 2010). Also, there is debate whether Big-C creativity involves similar or radically different processes to mini-c, little-c and Pro-C creativities (Hennessey & Amabile, 2010; Sawyer, 2012), and there is lack of research in Big-C creative processes (Sawyer, 2012). What seems important however is to recognise children's creative acts as valuable in themselves instead of looking at the potential of a child to demonstrate Pro-c or Big-C creativity in the future (Silvia et al, 2016).

## 2.4 How teachers foster creativity

While Amabile's research tends to focus on and be applied more in business

environments, her overview of the impact of classroom environments on student creativity highlighted the influence of teacher characteristics and behaviour, peer pressure, and overall classroom climate (1996). There have been numerous studies within this expanding area of research to the point where there is a consensus that teachers can play a crucial role in developing a creativity-inducing classroom environment (Ward, 2007). The conclusions from multiple studies can, I suggest, be summarised under six broad categories - teacher attributes, social environment, disciplinary and interdisciplinary teaching, pedagogical strategies, assessment of creativity, and the physical environment. The following list illustrates these categories by describing how teachers can act to encourage creativity in young people:

Teacher attributes:

- Demonstrating characteristics such as flexibility, optimism, exuding warmth (Amabile, 1996), openness to questions and ideas, having a sense of humour (Piirto, 2011), and not taking oneself too seriously (Sawyer, 2012)
- Modelling creativity within the discipline and outside it (Cropley, 2001; Fairweather & Cramond, 2010; Piirto, 2011; Sawyer, 2012; Sternberg, 2010; Torrance, 1987)
- Developing strong conceptual and methodological disciplinary understanding (Renzulli & De Wet, 2010).
- Having knowledge of pedagogy and using a variety of techniques to teach critical and creative thinking skills (Fairweather & Cramond, 2010; Tan & Wong, 2007).
- Understanding what creativity is and how it can be taught (Skiba et al, 2010; Sternberg, 2010; Tan 2007).
- Showing passion for what they teach and for teaching in general (Renzulli & De Wet, 2010).

Social environment:

- Establishing an atmosphere of psychological safety whereby everyone is valued irrespective of academic achievement, where there is mutual trust, where competition is minimised and where students feel their views will be listened to seriously by both teacher and peers (Cropley, 2001; Piirto, 2011;

Sawyer, 2015; Torrance, 1967).

- Establishing a warm atmosphere where one can "listen and laugh with students" (Kong, 2007: 315).
- Establishing an atmosphere in which students have autonomy over their own learning (Amabile, 1996; Runco, 2010), and where they have choices to demonstrate understanding (Starko, 2013).
- Adopting an inclusive approach in which they actively consult students (Rudduck & McIntyre, 2007; Sawyer, 2012).
- Giving ample time for students to collaborate and share perspectives (Sawyer, 2012).
- Developing an atmosphere in which students are challenged in a non-threatening way (Beghetto & Kaufman, 2007).

Pedagogical strategies:

- Using constraints within the processes and products of a creative task (Plucker & Dow, 2010; Stokes, 2010).
- Ensuring that there is sufficient time for creative thought and action (Feldhusen & Treffinger, 1980; Sternberg, 2010).
- Giving ample opportunities for students to reflect upon, refine and redefine their products (Sawyer, 2012).
- Encouraging inquiry (Starko, 2013).
- Explicitly encouraging creativity (Halpern, 2010).
- Encouraging a view that being creative is a habit rather than a skill set (Sternberg, 2010).
- Sharing examples of creative products (Runco, 2010).
- Developing students' creative metacognition (Armbruster, 1989; Balchin, 2008; Kaufman & Beghetto, 2013; Puryear, 2015; Sanz & Sanz, 2013).
- Enabling both independent and group creativity (Cropley, 2001).
- Structuring learning through projects in a range of contexts in and outside the classroom (Seltzer, 1999).

Disciplinary and interdisciplinary teaching:

- Developing domain-specific knowledge in their students (Baer & Garret, 2010; Cropley, 2001; Sawyer, 2012), including its methods (Starko, 2013).

- Encouraging students to think across disciplines or "cross-fertilize" (Csikszentmihalyi & Wolfe, 2014; Sawyer, 2012: 400; Sternberg, 2010).
- Providing models of creative behaviour and products (Runco, 2010).
- Studying the lives of creative thinkers within the discipline (Starko, 2013).

Assessment of creativity:

- Using formative assessment to provide timely constructive and specific feedback (Amabile, 1996; Beghetto & Kaufman, 2010; Csikszentmihalyi & Wolfe, 2014; Starko, 2013; Wiggins, 2011).
- Promoting self (Cropley, 2001; Seltzer, 1999) and informed peer assessment (Richards, 2010) as forms of formative assessment, and thus develop creative metacognition (Balchin, 2008).
- Using summative assessments, in which clear goals and criteria for excellence are clearly communicated, to reward creativity (Lassig, 2009; Sawyer, 2012; Sternberg, 2010; Wiggins, 2011).
- Emphasising intrinsic rather than extrinsic motivation so that extrinsic rewards, such as grades, are not primarily used to motivate students (Amabile, 1983; Csikszentmihalyi & Wolfe, 2014; Hennessey, 2007).

Physical environment:

- Making available and accessible a rich and diverse array of student-friendly resources, including mentors (Davies et al, 2012; Piirto, 2011; Renzulli & De Wet, 2010; Richards, 2010; Sternberg, 2010).
- For students in Secondary, Davies et al highlight the importance of students having access to enhanced or specialist resources (2012).
- Designing an open and flexible physically-arranged classroom that facilitates large group, small group, and individual learning (Davies et al, 2012).

While there may be a general consensus that teachers who carry out these classroom practices foster creativity, there is less clear consensus on the relative importance of each across age groups, including with adolescents aged 14 to 16.

## 2.5 Research on adolescent creativity in schools

There is limited understanding of adolescent creativity (Glăveanu, 2011; Lassig, 2013). Much of the research related to adolescent creativity occurs within the umbrella of gifted and talented education (examples include Kerr & McKay, 2013; Lassig, 2013; Slatter, 2009) which can carry an assumption that high levels of little-c creativity are accessible to few adolescents. Research on adolescent creativity seems to fall under six main themes, and I very briefly elaborate on these as fitting their relevance to the study. Some of the research discussed here either focused entirely on adolescents or included them within a larger sample.

The first theme is on developing tests to identify very creative adolescents so that they can be selected to receive specialised career guidance, access to special curriculum and advanced level training (examples include Akgul & Kahveci, 2016; Kerr & McKay, 2013).

A second theme is on determining developmental trends such as how creativity levels, and its varying components such as divergent thinking, change across different ages and within adolescence (Claxton et al, 2005; Jaquish & Ripple, 1980; Kleibeuker et al, 2013; Lau & Cheung, 2010). While slumps (i.e. sudden decreases in creativity) were identified in some of these (Claxton et al identified one for 11-12-year-olds, Lau & Cheung for 12-13-year-olds), these studies all suggest that, in general, children progressively become more creative up to and throughout adolescence. It has been suggested that these and earlier slumps can be explained by contexts within the school in which greater examination pressure or stricter rules exist (Barbot et al, 2016). That aside, social and neuropsychologists recognise that adolescence is a period of major cognitive development which explains general patterns of increased creative cognition (Baer, 2016; Kleibeuker et al, 2016).

A third theme is the impact of family backgrounds on adolescent creativity. While research is limited, weak correlations have often been found between adolescent creativity and both higher socioeconomic backgrounds and parent academic education (Dai et al, 2012; Leu & Chiu, 2015; Parsasirat et al, 2013). Indirect evidence, for example through bilingualism (Esquivel & Peters, 1999; Lee & Kim, 2011), or time living abroad (Leung et al, 2008), suggest that multi-cultural experiences tend to

facilitate creativity in adolescents and young adults, an interesting factor in this study as the school, in which the study was based, was culturally, ethnically and linguistically diverse in terms of its students and teachers.

The fourth theme in adolescent creativity research is determining relationships between levels of creativity and various personal and social factors. As examples, positive relationships have been found between adolescent creativity and intrinsic motivation (de Jesus et al, 2013), constant curiosity (Csikszentmihaly & Wolfe, 2014); academic achievement (Gajda, 2016), self-ratings of creativity (Karwowski, 2015), persistence and openness to experience (Morais, 2013, in Morais et al, 2015), and having peers who place value on creativity (Lassig, 2012).

A fifth theme is on measuring the effectiveness of creativity training. While much of this research indicates student gains in creativity (Scott et al, 2004), especially during adolescence (Stevenson et al, 2014), these gains may be short-lived (Plucker and Gorman, 1999) or due to students trying to be creative so that they conform to teacher expectations (Sawyer, 2012). Also, the courses and tests are frequently domain-general (Plucker & Gorman, 1994), and it is not always evident if the courses have an impact on domain-specific creativity. Importantly for educators, courses which are domain-specific tend to be successful with increasing creativity in that domain, although they have limited impact on creativity in other domains, as Dow and Mayer found in the case of mathematics, spatial and visual problem-solving (2004). There seems universal agreement that creativity is primarily domain-specific, even if the influence of domain-general creativity remains unclear (Sawyer, 2012). Thus, fostering creativity in schools may primarily have to do with ensuring the school's curriculum for each subject has outcomes that promote creativity, and that teaching, learning and classroom environments reflect these outcomes. This view of a curriculum is of course not a new idea, with some creativity researchers advocating such an approach (Craft, 2001; OECD, 2008 in Sawyer, 2012). Yet, redesigning curricula and schooling in this way still seems revolutionary, with Sawyer suggesting "a more *radical* approach is to teach content-area knowledge in ways that prepare students to be more creative using that knowledge" (Sawyer, 2012: 395, italics my emphasis). One curriculum model which seems to fit with Sawyer's radical approach is the International Baccalaureate (IB) Middle Years

Programme (MYP), an overview of which I provide in section 2.7.2.

These five research themes invariably involve psychometric measurements of adolescent creativity. Long, in her review of creativity research from 2003 to 2012, reported that 83% of articles publishing empirical studies in the five leading creativity journals were solely quantitative, while only 13% were qualitative and the rest involved both (2014). A sixth theme often does not involve psychometric and other quantitative measurements, and instead focuses on finding out what beliefs are held by adolescents 'on the ground' so that theories about creativity and of fostering its development can be more comprehensively described, contextualised and successfully applied. By the turn of this century, this approach to research was uncommon within school contexts (Diakidoy & Kanari, 1999), and continues as such (Lassig, 2012). When students are consulted (it is usually teachers or student teachers instead), there is a tendency to seek perceptions about creativity before and after a creativity course or about personality traits associated with creativity (such as de Souza Fleith, 2000; Dinca, 1999; Furman, 1998; Jaba et al, 2009).

Nevertheless, there may be a slowly moving trend to move from quantitative, psychometric, large-scale studies to qualitative, small-scale studies, the latter aiming to find out more about how adolescents view the nature and fostering of creativity (Zhou et al, 2014). With the student voice movement now relatively well established, this is perhaps predictable. Some of these perception studies have emphasised tensions between the beliefs of researchers, students and teachers (for example, Turner, 2013), or between teachers and students (for example, Slatter, 2009). Turner (2013) had the view that teachers and students had a vague and limited understanding of creativity in that they viewed it as confined and personal to the individual, and she suggested they undergo training to develop a broader definition more in line with what researchers (or she) believed.

While Turner's study examined the perceptions of students aged 9 to 18 years and their respective teachers, much research has focused in primary school where students are 3 to 11 years of age (examples are Cho et al, 2013; de Souza Fleith, 2000; Hong et al, 2009), early secondary where children are 11-14 years (examples are Dinca, 1999; Furman, 1998) or in universities (examples are Bjørner et al, 2012; Jaba et al, 2009; Tin et al, 2009; Zhou et al, 2014). There has been limited research on

adolescents aged 14 to 18. This gap is surprising given that adolescence is associated with increased interest in the relationship between self and others as well as of self-expression, a move towards specialisation in domain-specific knowledge in their schooling, and, as mentioned earlier, of rapid cognitive growth. Within the context of international schools or schools implementing the International Baccalaureate MYP, I have not located any research which examined the perceptions held by this age group of how creativity is fostered in the curriculum.

Table 2.1 gives a summary of research exploring perceptions of students within the 14-16 age group, including those that also explored teachers' perceptions. The nature of the research and the methodologies used varied significantly between these studies. Lassig's study overlapped in significant areas with this research, in that she used similar methodology (grounded theory) and methods, although her focus was on the creative process and on adolescents who were considered very creative in two academically-selective schools (one specialising in the arts and the other in science, mathematics and technology).

## 2.6 International schools

Even in the 19th and early 20th century, pioneers and organizations founded schools based on the premise that international, rather than national, perspectives needed to be emphasised (Sylvester, 2007). Such idealism for starting up schools was replaced with more pragmatic aims. In the decades that followed there was a notable increase in the number of English-medium international schools which came into existence primarily to serve the children of expatriates who had diplomatic, military, missionary, humanitarian or business obligations and who wanted an education like they would have received back in their home countries (O'Boyle, 2012). Inevitably, a hierarchy of international schools, anecdotally but unofficially, began to emerge, a trend that continues today with "flagship" or "tier 1" (as well as lower tiers, 2 and 3) schools offering higher quality resources and more innovative pedagogy for students, and better salaries and benefits for teachers (Bunnell, 2014: 23). CEIS, the school in which this study is set, considers itself a flagship school, a label which seems justified at least anecdotally and from my personal observations of its extensive facilities and

Table 2.1: *Studies of adolescent creativity*

| ***Author(s) (year of publication)*** | ***Context*** | ***Methods*** | ***Findings*** |
|---|---|---|---|
| Cheng, V.M.Y. (2010) | – China.<br>– National curriculum Science.<br>– Mainly 13-15 years of age. | – Questionnaire.<br>– Interviews. | – Students were consulted for their opinion on a modified science curriculum which emphasised creativity.<br>– Students reported feeling more confident in science and with having a better attitude towards the subject.<br>– To a lesser extent than confidence, they felt they had developed their creativity. |
| Hill, Tan & Kikuchi (2008) | – Singapore.<br>– Secondary students aged between 12 and 16.<br>– UK-style education<br>– in Singapore.<br>– Predominantly British but 26 other nationalities. | – Questionnaire.<br>– Tests. | – Secondary students' self-evaluations of their creativity (creative self-efficacy) and their happiness levels were positively related. |
| Lassig, C. (2012; 2013) | – Australia.<br>– Students 14-17 years of age.<br>– Highly creative students selected based on feedback from teachers and peers, and through personality and creativity tests. | – Questionnaires.<br>– Tests.<br>– Online discussion forum.<br>– Interviews.<br>– Focus groups. | – The creative process can involve four approaches - adaptation, transfer, synthesis, and genesis.<br>– These approaches can overlap.<br>– It was suggested to add educational creativity or 'ed-c' to the 4C model (at the same level as little-c), in which ed-c is exhibited in curricular and other educational tasks. |
| Leong, S. (2010) | – China.<br>– National curriculum music and visual arts.<br>– Students 13-14 years of age studying music or visual arts. | – Questionnaires. | – Visual Arts classes were perceived to emphasise creativity but Music did not.<br>– Students in Visual arts classes, but not Music classes, believed group learning fostered creativity. |
| Slatter, J.C. (2009) | – Singapore.<br>– UK curriculum, science, in a state school.<br>– Participants were high ability female students of science, aged 14-16.<br>– Science teachers. | – Quantitative.<br>– Questionnaire. | – The science teachers used a variety of classroom practices to foster creativity, although some classroom practices were infrequently used due to a lack of confidence, of curriculum time, of training, and of materials.<br>– Students perceived they were more likely to use creative thinking skills during competitions (those selected for entry) and in self-directed projects than in science classes. |
| Turner, S. (2013). | – UK.<br>– National curriculum.<br>– Students 9-18 years of age.<br>– Independent school.<br>– Teachers, including trainee teachers. | – Interviews (students).<br>– Questionnaires (teachers). | – Creativity was seen positively by teachers and students.<br>– Teachers gave broad definitions for it while students associated it with imagination and self-expression.<br>– Primary school teachers had more positive attitudes to creativity than those in Secondary.<br>– Beliefs about practices which fostered creativity were considered narrow and shallow. |

resources. It has purpose-built facilities for a wide range of subjects including arts, sports and science. The school places great importance to information technology,

and, for example, has interactive whiteboards in all classrooms.

The school is also what Hayden and Thompson describe as a "Type A 'traditional' international school", one which was set up primarily, and continues as such, to "cater for globally mobile expatriate families for whom the local education system is not considered appropriate" (2013: 5). This distinguishes it from "type B 'ideological' international schools" which were established primarily to bring children from different parts of the world together to foster peace and multicultural understandings, and from "type C 'non-traditional' international schools" which cater predominantly for host country nationals who have the means to choose an alternative and supposedly superior curriculum to that provided by the national system (2013: 5). While the origins of the school in this study lie firmly with type A, it has developed into one that shares many of the characteristics found in both type B and type C. In other words, it also aims to develop a more peaceful world by taking advantage of the multiple nationalities and perspectives found within its student and teacher bodies, while also offering a curriculum and pedagogy which is sometimes seen by local families as superior to that found in state schools. CEIS is a not-for-profit co-educational day school with just over 1000 students aged from 4 to 19 from approximately 50 nations.

## 2.7 The International Baccalaureate (IB)

The IB is a not-for-profit educational foundation which offers four programmes, all of which "promote intercultural understanding and respect, not as an alternative to a sense of cultural and national identity, but as an essential part of life in the 21st century" (IB, 2016a). There are over 4500 independent and state schools in nearly 150 countries authorised to teach one or more of the programmes, many of them claiming to be an international school (IB, 2016b). The IB has had a significant influence on the development of international schools since the 1960s, and is commonly seen today as a leading and innovative player in international education (Cambridge & Thompson, 2004; MacKenzie, 2010), although it by no means has global domination over other programmes that espouse arguably similar overarching beliefs and philosophies (Bunnell, 2011; 2014).

### *2.7.1 The IB Middle Years Programme (MYP)*

In this study, the participants were all involved in the final two years of the five-year MYP, a programme which aims to be inclusive to all students. The MYP provides a curriculum framework by which, as fitting their contexts, schools choose the subjects they offer and design the curriculum in each subject (see the MYP model in Figure 2.1). At CEIS, the following subjects were offered (with the MYP subject group in brackets) - Drama, Music and Visual Arts (Arts), Design (Design), Integrated humanities (Individuals and societies), English (Language and literature), French, German, Spanish (all Language acquisition), Mathematics (Mathematics), Physical and health education (Physical and health education), and Integrated sciences (Sciences).


*Figure 2.1* The MYP model (IB, 2014a: 5)

As can be seen in the MYP model, the ultimate aim of the programme is to teach for international-mindedness (outer circle), couched by the IB through the Learner Profile situated in the centre. In other words, the internationally-minded person is

described by certain attributes or values which include balanced, caring, communicators, knowledgeable, inquirers, open-minded, principled, reflective, risk-takers, and thinkers. The internationally-minded school, and its stakeholders, ideally model these values. The next innermost circle highlights innovative approaches to teaching and learning which are both concept-driven and rooted in six global contexts (for example, one is 'personal and cultural expression'). The outcomes of these are in the next circle, where it can be seen the emphasis on students showing action, including service within the community, and on completing extended projects. I will now explain some of these and other elements of the MYP model in more detail so that comments made by students and teachers in chapter 4 are better understood.

Students are required to demonstrate a commitment to contributing and learning from a diverse range of communities in what is termed 'service as action' ('SasA' at CEIS). This involves both teacher-initiated and student-initiated service activities (including those within the subjects' curricula). In addition, all students complete at least one interdisciplinary assignment, involving typically two subjects, in each year of the programme. In these assignments, students are assessed on their interdisciplinary knowledge, as well as on knowledge from the respective subjects involved. Finally, all students in the final year of MYP complete a Personal Project, a long-term inquiry culminating in the creation of a tangible (for example, a board game promoting collaboration) or intangible product (such as a fashion show). Teachers score these and other summative assessment tasks (sometimes called performances of understanding) by using IB-published subject-specific criteria, of which there are four in each subject, and also four in interdisciplinary understanding and in the Personal Project (IB, 2014a). In what is described as criteria-related assessment, teachers take a best-fit approach by matching student understanding in the task with the most appropriate achievement level descriptor in each criterion being assessed (which could be one, two, three or all four criteria). These descriptors indicate a score for each criterion (from 0 to 8), which in turn are added (maximum is 32) and converted to a final grade ranging from 1 (lowest level of understanding) to 7 (highest) (IB, 2014a). Figure 2.2 shows the descriptors in criterion B in mathematics, as one example, for students in the final year of the programme.

**Criterion B: Investigating patterns**

| *Achievement level* | *Level descriptor* |
|---|---|
| 0 | The student does not reach a standard described by any of the descriptors below. |
| 1–2 | The student is able to:<br>i. **apply**, with teacher support, mathematical problem-solving techniques to discover simple patterns<br>ii. **state** predictions consistent with patterns. |
| 3–4 | The student is able to:<br>i. **apply** mathematical problem-solving techniques to discover simple patterns<br>ii. **suggest** general rules consistent with findings. |
| 5–6 | The student is able to:<br>i. **select** and apply mathematical problem-solving techniques to discover complex patterns<br>ii. **describe** patterns as general rules consistent with findings<br>iii. **verify** the validity of these general rules. |
| 7–8 | The student is able to:<br>i. **select** and **apply** mathematical problem-solving techniques to discover complex patterns<br>ii. **describe** patterns as general rules consistent with correct findings<br>iii. **prove**, or **verify** and **justify**, these general rules. |

*Figure 2.2*: IB MYP Mathematics criterion B descriptors (IB, 2014b: 47)

### *2.7.2 Creativity and the MYP*

The IB claims that its education "fosters creativity and imagination" (IB, 2014a: 11). In showing support for this claim, the MYP identifies 16 broad or *key concepts* which students explore across the curriculum, one of which is creativity and is explained as follows:

> *"Creativity is the process of generating novel ideas and considering existing ideas from new perspectives. Creativity includes the ability to recognize the value of ideas when developing innovative responses to problems; it may be evident in process as well as outcomes, products or solutions."* (IB, 2014a: 57)

This definition places importance on the personal and metacognitive aspects of the creative process, a point mentioned earlier in section 2.4 when examining how teachers can foster creativity. While the link between creativity and metacognition has been acknowledged by others (Armbruster, 1989; Balchin, 2008), Kaufman and Beghetto have recently brought the link more centrally to the discussion of fostering creativity. They suggest that while it is important for students to learn how to be creative, it is also vital that at metacognitive levels, they develop an awareness of how creative they are in different situations and when it is appropriate to use this

creativity (2013). They suggest the term 'creative metacognition' which they define as "a combination of creative self-knowledge (knowing one's own creative strengths and limitations, both within a domain and as a general trait) and contextual knowledge (knowing when, where, how, and why to be creative)" (2013: 160). The authors place special importance on contextual knowledge and this emerged as a theme discussed by students and teachers in this study.

The *global contexts* also provide opportunities for creative thought and action. For example, 'personal and cultural expression' offers the possibility for students to explore "ways in which we reflect on, extend and enjoy our creativity" (IB, 2014a: 61). This quote brings the concept of well-being to the debate on creativity. Pursuing creative activities seems to contribute to a happy and fulfilling life (Csikszentmihalyi, 1997; Pannells & Claxton, 2008), while Sawyer adds that it helps people identify and respond better to daily challenges (2012). In an international school setting, Hill, Tan and Kikuchi (2008) found positive correlations between secondary students' self-evaluations of their creativity (creative self-efficacy) and their happiness levels, and similar findings have been observed with teachers in state school settings (Pannells & Claxton, 2008; Tan and Majid, 2011).

While the MYP encourages teachers to "be empowered to use their creativity and professionalism" in developing MYP learning units (2014a: 45), and makes quite explicit its aim to develop students' creativities, there are no specific strategies provided in IB guides on how teachers can do this.

## 2.8 The rise of interest in student voice

Since the early 1990s, consulting students about their experiences in school has become a more common tool for school improvement, especially in teaching and learning (Brooker & MacDonald, 1999; Corbett & Wilson, 1995; Fielding, 2004; Rudduck & Flutter, 2000). The reasons for this surge of interest in student voice within national educational systems are multifaceted and include enacting more democratic forms of schooling so that young people learn valuable dispositions for actively participating in a just society (Bohler, 2008; Flutter and Rudduck, 2004), the

adoption of the United Nations Convention on the Rights of the Child in 1989, which states that children and young people should be given the right to express their opinions on matters affecting their lives (Flutter, 2007; Lundy, 2007; Whitty & Wisby, 2007), and increasing appreciation of the value of constructivist teaching approaches which value young people's experiences, understandings and opinions (Cook-Sather, 2006). While it has not been widely reported in the international school literature, my experiences working in these schools and visiting them indicate that attempts are often made to consult adolescents. These efforts can be evident through active student representation on governing boards, genuinely empowered student councils and through online student surveys. However, I am not entirely convinced that consulting students systematically and in an authentic fashion is common in international schools but it is likely increasing.

Using the poetic words of Rudduck and Flutter, the development of student voice has potential in "carving a new order of experience" (2000: 75) for adolescents in international schools, although it is important to understand the underlying assumptions of adults when seeking to find out what young people think. A variety of terms have evolved to describe how young people are situated in the student voice movement. We have student 'participation', 'empowerment', 'involvement', 'consultation' and 'voice', with the latter becoming increasingly accepted terminology (Fielding, 2008; O'Boyle, 2010). It is important to add that 'voice' encapsulates a diversity of voices, and does not imply that students are always united, or should be, in their opinions and ideas (Robinson & Taylor, 2007; Whitty & Wisby, 2007). 'Voice' also has multiple modes of expression. It is clear that students can communicate their feelings, perspectives and ideas effectively in a wide variety of modes such as through writing, drawings, and actions (O'Boyle, 2013). Thus, student voice research ideally encompasses a wide variety of methods.

*Consulting* is a potentially problematic word in that it may imply that young people respond to adult-generated questions which are uncontroversial and peripheral to the core responsibilities of staff (Fielding & Rudduck, 2002). While it was perhaps easier for me as a non-staff member to ask potentially controversial questions, Flutter and Rudduck warn that simple and quick methods of data collection such as closed-answer questionnaires may not reveal an authentic account of what students

think (2004). '*Listening*' has been suggested as an alternative word (for example, Schultz et al, 2008) although I believe this carries less responsibility to act upon what is heard, the result of which could mean that we provide young people with forums to speak out but their feedback does not influence schoolwide decisions and the status quo of power relations is maintained (Fielding, 2004). By intentionally or unintentionally trying to maintain power over young people, adults resist having their own perspectives questioned and taking advantage of suggestions. As Fielding asks, "are we sure that our positions of relative power and our own personal and professional interests are not blurring our judgements or shaping our advocacy?" (2004: 303).

It is, therefore, important not to romanticise student voice as an easy and non-controversial approach to understanding what works best in schools. Underlying this study was a deep-rooted awareness that consulting and listening to what young people say required letting go of my preconceptions (in the spirit of grounded theory research) and trying to attentively decipher what adolescents were saying and what they wanted to talk about.

## 2.9 Chapter summary

This chapter emphasised a multifaceted and holistic view of everyday creativity, and how it was encouraged in educational contexts. I pointed out the importance of encouraging creativity through the formal curriculum, rather than through separate training courses. I argued that consulting young people can constructively inform effective pedagogy for creativity.

It is evident from the literature review presented here that there have been limited attempts to understand creativity from the perspectives of 14 to 16-year old adolescents, a period often noted for its cognitive, physiological and social development. Furthermore, the international school and MYP contexts for this study suggest a broader conceptualization of adolescent creativity.

The next chapter outlines and justifies the research design adopted.

# Chapter 3: Research Design

## 3.1 Introduction

This chapter describes the rationale for adopting a grounded theory approach in exploring adolescents' perceptions of creativity in a school context. I first describe my ontological and epistemological beliefs, and explain how my tendencies towards critical realism lead me to a postpositivist paradigm of inquiry. This is followed by a discussion of grounded theory (GT) as a methodology and how the GT developed by Anselm Strauss lends it to the philosophical beliefs I brought to the research enquiry. The methods applied in the study are described and justified. Throughout the chapter, I discuss the credibility and ethical aspects of the study (particularly in researching with children) and I also dedicate separate sections to them.

## 3.2 My worldview

In justifying the methodology chosen in social science research, it has become advisable for researchers to state their ontological and epistemological beliefs (their worldview), and then to define their paradigm of inquiry (Bryman, 2012; Guba & Lincoln, 1994; Mertens, 2014; Thomas, 2009). Such advice pertains to those pursuing a grounded theory approach (Annels, 1997; Birks & Mills, 2015).

However, some authors, especially those advocating mixed-methods research in which qualitative and quantitative approaches are integrated, have argued that a researcher's philosophical beliefs are not what are relevant but the wise choice of methodology and methods are (Johnson and Onwuegbuzie, 2004; Muijs, 2011; Tashakkori & Teddlie, 2010). *Methodology* is a general term which refers to the conceptual framework used in studying some phenomenon while *methods* are specific research techniques for gathering and analysing data (Scott & Usher, 2010; Silverman, 2006; Willig, 2013).

It seems useful however to put forth a personal philosophy to help avoid any perceived conflicts and distracting tensions between my worldview and how I collected and analysed data. As Mertens points out, even in her being sympathetic to philosophical and methodological pluralism, research has not yet been able to demonstrate full integration of the diversity of philosophical paradigms and advises researchers to be aware of their worldview and the way it influences their approach to research (2014).

My worldview reflects my ontological and epistemological assumptions. *Ontological* assumptions are based on the nature of reality (what is real?), including the nature of the human being in the world (Denzin & Lincoln, 2011; Williams, 2001). *Epistemological* assumptions are based on what can be known and the relationship of knower and known (how and how much do we know?) (Guba and Lincoln, 1994). In the rest of this section, I outline how my critical realist position supports a postpositivist paradigm of inquiry.

### *3.2.1 Critical realism*

I am a *realist* in that I believe that the world of material things has a mind-independent existence and that if there were no living organisms in the universe, matter would or could exist (Landesman, 1997). Also, contrary to *direct* or *naïve* realism, I believe that my senses give me a subjective and prejudiced view of reality (Landesman, 1997; Schrödinger, 1958). Humans, like all other living organisms, have sensory organs which are not capable of being stimulated by all the properties of matter, resulting in biases of perception which reflect our evolutionary past (Gould & Purcell, 2000). Thus, humans, compared to other mammals, have a remarkable ability to detect colours and see objects in 3-D while we have a relatively poor capacity to smell the presence of other living organisms in our surroundings. While I believe in one reality, knowledge of this is extraordinarily difficult because of our biased senses and the astounding complexity of determining causes and effects.

More broadly, I believe objects in the social worlds also exist independently of me (Sayer, 2015). I was born into pre-existing social constructs such as gravity or creativity which continue to exist independently. As a researcher, I make the best

sense of events by choosing appropriate data collection instruments (methods) and analytical tools so that theories are robustly developed and defended. This philosophical stance towards research fits with *critical realism*, and in advocating for it in case study research, Easton usefully describes its main implications:

> *"Observation is fallible. It is unlikely to reveal completely and lead to a full understanding of any social situation. Since there can be no definitive criteria to judge the "truth" of a particular version, critical realism relies on the researcher to collect further data that helps to distinguish among alternative explanations and on the community of researchers to debate them thoroughly."* (2010: 123)

Therefore, theories are always tentative and inevitably flawed. For the critical realist, it is important that others have opportunities to challenge, reject or refine theories, or to more rigorously define their limits of application (Dunbar, 1995). After all, critical realists are pragmatists (Easton, 2010).

Essentially, critical realism involves a realist ontology and a relativist epistemology (McEvoy & Richards, 2003). While there is one reality, there can be several competing (but not necessarily judged as equal in merit) explanations for this reality, each explanation grounded in assumptions of an era, culture, place or approach to research (Oliver, 2011). In the next section, I align my critical realist stance with an overall research mode of inquiry.

### *3.2.2 Postpositivism as a mode of inquiry*

My ontological and epistemological beliefs come under the umbrella of *postpositivism* (Hartas, 2010) if we consider the five competing paradigms identified by Lincoln et al in their popular framework (2011). A paradigm is a basic set of assumptions about the world and how inquiry should be conducted in it (Thomas, 2009), and thus describes a set of ontological, epistemological and methodological beliefs (Lincoln et al, 2011). As with critical realists, postpositivist approaches demonstrate a commitment to epistemological and methodological pluralism (McEvoy & Richards, 2003; Patomäki & Wight, 2000). Methodologically, postpositivist approaches in the social sciences tend to be in natural settings where the participants' views on how they make sense of their worlds are elicited and analysed by the researcher (O'Boyle,

2013; Patomäki & Wight, 2000; Ryan, 2006) with the aim of approximating some external reality. Postpositivists recognise that determining whether a line of research ought to be qualitative, quantitative, or both depends what questions are being addressed (Paul & Marfo, 2001).

When acting as researchers, postpositivists tend to assume a learning role rather than a testing one (they conduct research among participants and not on them) and, in appreciating life's complexity, avoid dogma and an authoritarian voice to keep their writings reflexive while still communicating with authority (Ryan, 2006). Like critical realists, postpositivist researchers in the social sciences seek explanations, these arising from an open-ended and exploratory interaction with the participants in which pertinent research questions arise over time (O'Leary, 2004). The postpositivist recognises that triangulating across carefully chosen but ultimately imperfect data sources, and analysing data rigorously, help ensure a comprehensive understanding of a phenomenon (Denzin & Lincoln, 2011; McEvoy & Richards, 2003; Onwuegbuzie et al, 2009).

One fitting methodological approach is grounded theory which encourages a researcher to refine the research question as data is collected and which provides a framework for analysing participant-driven data so that a theory emerges. The scarcity of research in adolescents' perceptions of creativity and how to foster it made it difficult to know which were the important themes, and their underlying relationships, to explore. In other words, it was difficult to select a suitable theoretical framework for the study of adolescent creativity which would guide data collection (Lassig, 2012). GT offered an approach in which participants, rather than researchers, played an essential role in designating important themes and research questions. Furthermore, grounded theory offered possibilities to go beyond description and seek underlying relationships between these themes. GT also offered the flexibility to decide during, rather than before, the study which methods were most appropriate to use as data was collected. Finally, grounded theory helped ensure that the findings would be largely articulated in the words of adolescents rather than adults, which would help maximise the practical application of the findings. What now follows is an overview of this approach and a justification of how it comfortably fits with my worldview and with research into perceptions.

## 3.3 Grounded theory (GT)

### *3.3.1 Basic tenets of grounded theory*

As an approach to research, grounded theory's aim is the "discovery of theory from data systematically obtained from social research" (Glaser & Strauss, 1967: 2). Grounded theory (GT) is used to explain a process (Creswell, 2012). The GT approach moves beyond thick description to explanatory theory (what are the causes and effects of what is happening?), it emphasises that one looks for the theory in the data and not elsewhere (what theory is grounded in the data?), and it offers a step-by-step, systematic procedure for analysing data (how do I analyse the data in an unbiased fashion?) (Glaser & Strauss, 1967). Furthermore, GT acknowledges that as data come in and are analysed, they give direction for the researcher to ask new questions, probe deeper into new or possible concepts or variables, and to review future methods; as Creswell points out, GT has features that contain a self-correcting nature (2012). To appreciate the philosophical underpinnings and procedures of GT, I place the origins of GT in perspective and briefly trace its historical development as recommended by Bartlett & Payne (1997).

### *3.3.2 Historical development of grounded theory*

Within a US context, GT was developed in the 1960s by Barney Glaser and Anselm Strauss, at a time when the popularity and status of ethnographic and other qualitative modes of inquiry in sociology were in decline and were being replaced by scientific deductive approaches with its corresponding hypothesis testing and verification techniques (Charmaz, 2008; Glaser & Strauss, 1967; Oliver, 2011).

In building on the rich legacy of analytical and research procedures implicitly laid out and often orally passed on among qualitative researchers, Glaser and Strauss made explicit an approach which emphasised theory *generation* instead of generation testing in their seminal book '*The Discovery of Grounded Theory: strategies for qualitative research*' or often simply called *'Discovery'* (Charmaz, 2008; Glaser & Strauss, 1967). In taking the high middle-ground, *Discovery* was seen to bridge the tense qualitative/quantitative divide. By offering a rigorous and systematic

procedure for analysing data, GT had leanings towards the positivist approaches of the natural sciences. On the other hand, it offered renewed possibilities for social scientists to interact with research participants so that they could explore their perceptions and understandings in depth (Bartlett & Payne, 1997). Glaser and Strauss encouraged researchers to use GT to explore areas considered inaccessible to positivist sociologists such as "loneliness, brutality, resistance, debating" (1967: 38). This attempt to explore complex phenomena in depth is characteristic of postpositivist approaches to inquiry, although neither Glaser or Strauss have ever explicitly associated themselves with the paradigm. However, many authors such as Annells (2011), Buckley & Waring (2009) and Ralph et al (2015) have pointed out their inherent postpositivist tendencies in *Discovery* and later publications.

While *Discovery* was not met with immediate popular appeal upon its publication, GT has now become one of the most popular research designs in the world (Birks & Mills, 2015). Education researchers encouraged the use of GT from relatively early on (Richer, 1975) and it has become popular with them (Strauss & Corbin, 1998; Thomas & James, 2006; Thornberg, 2011). More specifically, GT studies of the perceptions of young people in educational settings have been widely promoted (Lloyd-Smith & Tarr, 2000; Morrow & Richards, 1996) and conducted (Lassig, 2012; Piggot, 2010). From this historical overview, we now discuss in more depth the procedures of GT.

### *3.3.3 Procedures of grounded theory*

GT researchers approach their studies with an open mind and with as few preconceptions as possible to see what is going on. Ideally, they have no hypotheses beforehand, they are not sure of the exact areas of focus, and they are open to changing their ways of obtaining data (Glaser & Strauss, 1967). They then quickly set about interpreting incoming data to help inform what the important concepts are, and the relationships between them, that deserve further exploration in the next round of data collection. This process continues until the researcher feels that further data collection is unlikely to provide any new insights, thus arriving at a point of 'theoretical saturation' (Glaser & Strauss, 1967). Along this journey, the GT researcher is formulating and testing hypotheses within the field, until finally a

theory is formed which is firmly rooted in the data (Strauss & Corbin, 1967). This continuous commitment to focusing on what participants say and do helps ensure that any theory generated will be relatively objective, a central tenet of a postpositivist paradigm of inquiry, and have practical implications in a similar context. In the same way that critical realists acknowledge every event's unique complexity, GT recognises that it is naïve to formulate a theory that distances itself from the study's context. It is also more likely to be unhelpful, impractical and irrelevant.

GT has been described as a method of qualitative data analysis (Bryant & Charmaz, 2007), a methodology (Corbin & Strauss, 2015; Glaser, 2016), a paradigm (Walsh, 2015), and non-committal terms such as a research strategy, approach or framework (Bryman, 2012; Denzin & Lincoln, 2011). Like others who support Glaser's and Strauss' designations of GT, I view it as a methodology (Clarke, 2005; Creswell, 2012; Oliver, 2011; Ralph et al, 2015; Walsh et al, 2015). Kothari suggests some questions that methodology responds to:

> *"Why a research study has been undertaken, how the research problem has been defined, in what way and why the hypothesis has been formulated, what data have been collected and what particular method has been adopted, why a particular technique of analysing data has been used and a host of similar other questions are usually answered when we talk of research methodology concerning a research problem or study."* (2004: 8)

Responses to these questions seem to demand significantly more than a description of how data analysis occurs, even if we use Charmaz's extensive description of GT methods as "systematic guidelines for gathering, synthesizing, analysing and conceptualising qualitative data to construct theory" (2008: 82). If a paradigm encompasses ontology, epistemology and methodology (Denzin & Lincoln, 2011), GT cannot be considered as such.

As a methodology, GT thus offered promising possibilities for this research. However, since the publication of *Discovery*, GT has developed into three main versions, each with distinct processes, so that I need to clarify which I am adopting (Babchuk, 2010; Denscombe, 2014). I now give a summary of each of these versions and a justification

of how one of these approaches fits with my philosophical beliefs and area of research.

### *3.3.4 Versions of grounded theory*

Since their publication of *Discovery*, Glaser and Strauss began to develop their own distinct versions of GT and this divergence became solidified with separate publications in the early 1990s by Strauss and Glaser. Strauss and Corbin considered their book (1990) a refinement of GT which insisted on a more prescriptive and systematic framework of data analysis (O'Boyle, 2013). Glaser strongly critiqued this framework, unsuccessfully urging them not to publish in the first instance, and subsequently published his own guide to GT called "Emergence vs forcing: basics of grounded theory analysis" which he claimed built on *Discovery* rather than deviated from it (1992). Even today, Glaser continues to elaborate on his version, which has become known as 'Glaserian' or 'Classical' GT (Hernandez, 2008).

Glaser urged researchers to abandon the rigid rules and procedures of Strauss and Corbin, and to take a more flexible and creative approach to data analysis as was the spirit of *Discovery* (Glaser, 1992). While *Discovery* recognised that the researcher cannot analyse data without a perspective, Glaser argued that Strauss and Corbin's more active encouragement of previous knowledge to enter the field of analysis could lead to the researcher's preconceptions forcing data analysis (Glaser, 1992; Glaser & Strauss, 1967). However, Strauss and Corbin (1990) stressed that GT researchers need to strike a balance between some pre-reading to ensure they are sensitive to the data, and excessive pre-reading that will stifle efforts to discover theory. Corbin & Strauss also urged GT researchers to take a critical stance towards their previous knowledge of theories by making sure that they genuinely earn their way into the analysis rather than be forced in (2015).

Glaser also argued that Strauss and Corbin's over-formulaic approach to data analysis stifles creativity (Glaser, 1992), while a similar criticism of GT in general is made by Thomas & James (2006). Strauss and Corbin were aware that rigid application of GT methods to data analysis would likely lead to poor theory and clarified that "these procedures were designed not to be followed dogmatically but rather to be used

creatively and flexibly by researchers as they deem appropriate" (Strauss & Corbin, 1998: 14). For creative thought, it is important to be theoretically sensitive to the data, which can be brought about not only by knowledge of the relevant background literature and through professional experiences, but also by continuously immersing yourself in the data because "insights do not just occur haphazardly, rather they happen to prepared minds during interplay with the data" (O'Boyle, 2013; Strauss & Corbin, 1998: 49-50).

The attempts of Classic GT and Straussian GT to describe a single external reality contrast with more recent versions of GT such as those of Clarke (2005) and Charmaz (2006) that reflect a relativist ontological position of multiple external realities. In Charmaz's self-labelled 'Constructivist' GT, each reality is constructed by individuals as they find meaning in their interactions with objects in the world (Charmaz, 2006; Guba and Lincoln, 1994). Constructivist GT researchers are very much part of the world they study and the data they collect, and so they actively participate in *constructing* (rather than discovering) grounded theories through their involvements and interactions with "people, perspectives and research practices" (Charmaz, 2006: 10). Multiple realities are presented in data analysis, corresponding to each participant's social reality and perspectives within it (Charmaz, 2006). The basic premise of constructivist GT is to reveal the stories, experiences, meanings and views of the research participants, locate them in their web of connections and constraints to give one interpretation, that which the researcher constructs, of the studied world (Charmaz, 2006). Constructivist GT's alignment with a relativist ontology is a stance that is hard to reconcile with a critical realist's philosophical framework.

It is worth stressing that there is a general acceptance that Classic, Straussian and Constructivist GT all come under the umbrella of GT methodology (Charmaz, 2006). GT research involves similar processes and outcomes which I now summarise, with GT-specific terminology included in brackets. It involves the researcher being able to conceptualise the data at high levels of understanding and insight (theoretical sensitivity), continuously extracting concepts from data for further exploration (theoretical sampling), making conceptual comparisons during each stage of the analysis (the constant comparative method), memo-writing to enable the researcher to reflect critically on data throughout (memoing), coding data into conceptual

categories, formulating a theory which explains at a conceptual level the phenomenon being studied and its corresponding context (theory generation) and delaying a comprehensive writing of the literature review until after data analysis (Bryman, 2012; Charmaz, 2006; Kenny & Fourie, 2015). The various approaches taken by Classic, Straussian and Constructivist GT differ in how these processes occur, which in turn reflect their distinct philosophical lenses.

## 3.4 Straussian grounded theory

### *3.4.1 Justification for adopting Straussian grounded theory*

As is becoming evident, this study has followed the guidance provided by Strauss and Corbin (1998). Their more open acknowledgement of the value of GT researchers' previous knowledge makes it more compatible with a critical realist position which holds that we cannot "step outside our own perspectivism" (in other words, our pre-research theories) to propose causal explanations for observed phenomena (Oliver, 2011: 374).

As an inexperienced researcher, Strauss and Corbin's clear, flexible and systematic set of procedures for analysing data and developing theory seems more suitable than Glaser's intuitively-based approach (O'Boyle, 2013). It is interesting to note that since the first two editions, Corbin has relaxed the formulaic rules of coding and has moved the methodology in the direction of constructivist GT, making sure to clearly distinguish from her own opinions with those of Strauss, who passed away in 1996. Accordingly, I have leant towards adopting Straussian GT (rather than what one might arguably call Corbinian GT) as presented in the first two editions (1990; 1998).

### *3.4.2 Reasoning in Straussian grounded theory*

All versions of GT are an attempt to understand the world through various forms of reasoning, namely inductive, deductive, abductive and retroduction. This section focuses on how they are apparent in Straussian GT.

The thinking process of *induction* involves moving from observation (which uses your senses or instruments) to theory, from the specific to the general. The person employing inductive reasoning observes specific events, determines patterns in them, and then develops a general explanation or theory that encompasses all past and future events like it. Seeking similarities and differences within and between sets of data in GT involves largely induction (Lodico et al, 2006).

GT also involves deductive reasoning. Contrary to induction, *deduction* involves moving from theory to observation, from the general to the specific. The person employing deductive reasoning uses previous theories to develop a conclusion (hypothesis or theory) logically (Snape & Spencer, 2003). Thus, the first step of the Straussian coding process will inevitably involve deductive reasoning as the researcher labels codes with pre-conceived concepts derived from prior research, conversations, readings or theories (Belfrage & Hauf, 2016; Strauss & Corbin, 1998). Deductive reasoning is again evident in GT when we test all such hypotheses through theoretical sampling, a point made clear in *Discovery* (Glaser & Strauss, 1967). Thus, as acknowledged by Glaser and Strauss repeatedly, GT research is not an inductive approach but rather an interplay between induction and deduction (Corbin & Strauss, 2015; Glaser, 1992; Strauss, 1987; Strauss and Corbin 1998), although Strauss' version more obviously recognises the role of the latter in theoretical sensitivity and hypothesis testing.

Although they were aware that deduction played an important role in GT research, Glaser and Strauss stressed the inductive element in *Discovery* as a response to the predominant culture at the time which situated logico-deductive reasoning as central to respectable research in the social sciences (Strauss & Corbin, 1998). For this reason, GT is sometimes mistakenly seen as an inductive (such as Jansen, 2006) or quasi-inductive (Scott & Usher, 2010) approach. As the deductive-inductive interplay in GT became even more evident, and a recognition that there were limitations of each type of reasoning to produce new theory in the natural (Proctor & Capaldi, 2006) and social sciences (Robson, 2011; Scott & Usher, 2010), increasing emphasis was placed on how GT researchers creatively come up with new conceptual understandings and hypotheses within their data.

While Glaser does not mention it and Strauss only gives it a footnote in his earlier

book (1987), the type of reasoning suggested for this creative process is *abduction* (Locke, 2007; Strübing, 2007). From the perspectives of scientific psychology and GT respectively, Proctor & Capaldi (2006) and Charmaz (2006) describe abductive reasoning as the process in which patterns are first recognised in data, then hypotheses are suggested and compared to each other, and finally, one is selected that provides the best explanation. In other words, the researcher analyses data by first, looking for and discovering relationships which previous theories surprisingly don't predict or explain, and second, developing a new explanation or theory by looking at the data in an unconventional way which explains the case at hand (Locke, 2007; Reichertz, 2007). This act of developing explanations involves the researcher thinking and theorising creatively (Locke, 2007) and logically (Reichertz, 2007).

The discovery procedure in GT is, therefore, a cycle of abduction, deduction and induction. Data analysis involves abduction whereby a hypothesis is generated. Deduction follows whereby predictions are made which would support the hypothesis. Looking for evidence for these predictions involves induction, and if evidence cannot be found, then the process of abduction begins again. This interplay between abduction, deduction and induction, central to the processes inherent in GT, has been described as *retroduction* (Chiasson, 2005). This commitment to retroduction is typical for a critical realist (Patomäki & Wight, 2000) and a compatible mode of inquiry for a postpositivist.

### *3.4.3 Data collection in Straussian grounded theory*

Data collection in GT is guided by *theoretical sampling*, a process which evolves during the research process rather than being pre-determined beforehand (Glaser & Strauss, 1967; Strauss & Corbin, 1998). In *Discovery* it appears clearly defined as

> *"... the process of data collection for generating theory whereby the analyst jointly collects, codes and analyzes his data and decides what data to collect next and where to find them, to develop his theory as it emerges."* (1967: 45)

While this original definition has remained largely undisputed and is frequently quoted, the nature of the 'data to collect' or sampling unit varies in emphasis from

one GT approach to another. It was initially linked to individuals or groups (Glaser & Strauss, 1967), and Glaser (1992) and Charmaz (2006) continued to emphasise this view. However, Strauss and Corbin have stressed that it is about selecting "sample incidents, events, or happenings and not persons per se" (1998: 202). While there is much overlap between the two interpretations, I have taken that of Strauss and Corbin, which seems a more practical approach to theoretical sampling.

### *3.4.4 Data analysis in Straussian grounded theory*

GT data analysis consists of using theoretical sampling jointly with "explicit coding and analytical procedures" (Glaser & Strauss, 1967: 102). This coding consists of continuous cycles of denoting, developing, comparing and consolidating concepts to form a developing theory (Corbin, 2012; Glaser & Strauss, 1967). Versions of GT use varied but similar terminology to describe types or stages of coding but Corbin urges researchers to understand the logic that underlies coding rather than be concerned with how various stages of coding are named (2012). Illustrating this, she cites her own work in which the third and fourth edition of her and Strauss' popular texts do not refer to 'open', 'axial' and 'selective' coding, unlike previous editions (2012).

I will be using the terminology used in Strauss and Corbin's first two editions. As such, my data analysis consisted of moving back and forth between open, axial and selective coding (Strauss & Corbin, 1998). *Open coding* involved naming and consolidating (i.e. categorising) concepts by close examination of the data, much of this done through line-by-line analysis as recommended by Strauss and Corbin (1998). Thus, open coding began with data from the questionnaires, and continued as further data was collected from the other methods (see Appendix A for an example of a coded focus group transcript). At the beginning, this process meant segments of data were coded with conceptual labels (i.e. concepts) and then similar concepts were systematically grouped (or categorised) into higher-level and more abstract concepts called categories (Strauss & Corbin, 1998). Sometimes, as categories became increasingly dense, I developed sub-categories, and conversely, categories often merged or one became subsumed under another (Kenny & Fourie, 2015).

As I proceeded with open-coding, many categories and lower-level concepts emerged (approximately 50 and 220 respectively at an early stage; see Appendix B), although the numbers varied continuously during the process. An example of a category at this early stage was 'having choices', having emerged from lower level concepts such as 'long-term assignments', 'choice in product', 'choice in process', 'access to resources', and 'open-ended research'. As open coding proceeded, many of these lower-level concepts became properties. These properties defined the characteristics of the category, although the names of these properties sometimes changed. For example, 'long-term assignments' became simply 'time'. Finally, in open coding, the ranges of variance within properties were clarified in a process called "dimensionalization" (Strauss & Corbin, 1998: 121). Thus, dimensions for 'time' ranged from 'little time to make choices' to 'a lot of time to make choices'.

In summary, open coding involved "naming concepts, defining categories, and developing categories in terms of their properties and dimensions" (Glaser & Strauss, 1967: 103). Strauss and Corbin make clear, as does *Discovery*, that a key component of open and subsequent coding is memo-writing (1998). Writing memos helped me reflect critically and creatively upon the categories and their interconnections, as well as help me keep focused and aware of the data (Strauss and Corbin 1998). I wrote memos either as text (see Appendix C for examples) or as diagrams (see Appendix D for an example) and this was done in electronic form through Nvivo software with occasional notes and diagrams written by hand.

In *axial coding*, links were made and remade between categories, and between categories and subcategories (Strauss & Corbin, 1998). Categories and their sub-categories became increasingly split up, reorganised, consolidated or renamed. Broader over-arching categories emerged that were more dense and abstract, resulting in four main categories (for example, 'shaping disciplinary relevance'). This process was a long and dynamic process which overlapped significantly with open-coding.

*Selective coding* attempted to find relationships between these main categories so that I gradually developed a single core category which integrated them (Strauss & Corbin, 1998). After paying attention to poorly developed categories, and saturating them through further theoretical sampling (Strauss & Corbin, 1998), I developed a

conceptual model. For example, the 'unsaturated' sub-category 'consulting' within the category 'shaping creative metacognition' was explored further in the individual interviews by referring to the event of 'participation in the research'. Another example of theoretical sampling involved PowerPoint presentations and how adolescents perceived these 'events' as not always successfully encouraging creativity, so to explore this relationship further I asked teachers. I reached a stage where I perceived that more data yielded little extra information in categories, a point of *theoretical saturation* (Glaser & Strauss, 1967), and so data collection stopped. After further analysis, I presented my interpretation of the data and theoretical model to the students and teachers for their feedback.

This model attempts to explain what was happening at CEIS only, although in the next chapter I tentatively raise possibilities for its application to the narrow field of fostering creativity in schools. GT encourages the integration of such a mini or *substantive* theory with a big or *formal* theory to explain the findings (although this is not necessary); in other words, to move from substantive to formal theory (Glaser & Strauss, 1967; Strauss & Corbin, 1998). I did not construct a formal theory on for example explaining how some young people are more creative than others.

GT research is sometimes seen as naïve in its thinking that it can produce theories (Thomas & James, 2006), and yet GT always recognised the limitations of its findings. A GT theory is based solely on the data used to generate it and thus to the specific context of the study, and it is much more likely to be a hypothesis if the researcher or someone else wants to apply it to other contexts (Glaser & Strauss, 1967). *Discovery* clarifies that GT theories typically "fall between the 'minor working hypotheses' of everyday life and 'all-inclusive' grand theories" (Glaser & Strauss, 1967: 33).

## 3.5 The case study

A case study is an in-depth exploration of one case or set of cases (Creswell, 2014; Thomas, 2009). The case could be an individual, group, institution or community (Gillham, 2000). A variety of research approaches can be taken to explore the case; choosing to do a case study is therefore not a decision about methodology (Flyvberg, 2011).

The ‘case’ or context of this case study was adolescents aged 14 to 16 studying, and teachers working, in the final two years (M4 and M5) of the IB MYP in a well-respected international school in central Europe (which I have called CEIS, a pseudonym). This age group was chosen for two reasons. The first is that few studies have examined this age group. The second reason is they represented the group most familiar with the IB MYP, including the Personal Project, and so they could more easily connect elements of the programme with creativity.

The aim of case study research is to gain an in-depth understanding of a context, although the trade off to this rich and detailed analysis is a lack of generalisability (Scott & Usher, 2011; Thomas, 2009). It is impossible to find another identical case to apply the findings and it is hard to judge how similar other cases are. While case studies may not be generalizable in the application of the findings, they may be useful in understanding how other similar cases might operate (Gillham, 2000). Thus, my findings aim to offer tentative insights and advice for schools elsewhere to consider as fitting their contexts, presumably applying more to schools which consider themselves international and which offer the IB MYP.

Case studies, while typical in qualitative research, are not confined to particular methodologies or methods, although they most commonly involve a variety of methods and sources to ensure triangulation (Flyvberg, 2011; Gillham, 2000; Robson, 2011; Thomas, 2009). While different kinds of data collection instruments and data sources might be expected to give consistent data, this is sometimes not the case and Gillham notes that this may provide insightful information in how the situation needs to be understood in a different or less simple way (2000). Indeed, case studies tend to be used where no single method or perspective can provide a full explanation of what is happening in the ‘case’, and where understanding needs to be “holistic, comprehensive and contextualised” (Lewis, 2003: 52).

Another important aspect of the case study is what Gillham calls ‘representativeness’ (2000) which calls to question whether the participants in the study (M4/5 students and teachers) are a representative sample of the group at large (all the students and teachers of M4/M5). Through an interview on 15 June (not audio-recorded), the MYP Coordinator believed that the students who completed the questionnaire and participated in the focus groups and interviews represented a variety of academic

achievements, of English proficiency, and of creative accomplishments. The coordinator did not think that those who agreed to participate in the research had any defining characteristics which made them stand apart from the rest of the M4/5 group. Nevertheless, I recognised that the participants may have distinguished themselves from others in, for example, their interest in creativity.

As with GT, case study researchers need to acknowledge and take advantage of their theoretical sensitivity to make sense of the data but at the same time not blind themselves to what the data reveal because of their personal assumptions. As Gillham advises, "you need to take the stance that you are going into a foreign country" (2000).

Thus, case study research emphasises a depth of understanding of the context and processes of the phenomenon under study, what the causes and effects of the phenomenon are, and frequently raises new hypotheses and research questions (Flyvbjerg, 2006). The case study, therefore, complements GT and a postpositivist mode of inquiry.

## 3.6 Timeline and Methods of Data Collection

### *3.6.1 Seeking school approval and participant consent*

In October 2015, I received approval from its head to conduct the study in a highly-regarded international school in East Africa implementing IB programmes, including the MYP. I had previously worked in its sister school about 2 hours away. Later, I notified the school's administration and volunteer participants that I was no longer able to carry out the study there. There were two main reasons for this. One was that it proved very slow moving to collect consent forms from the students' families even with reminders. This appears to be a common issue in school research with informed consent (where participants need to tell you they are participating) from guardians for their children (Greig et al, 2007), and while implied consent (where participants need to tell you they are not participating) may have increased the number of participants, and minimised chances of samples been skewed (Thomas, 2009), the ethical imperative drove the need for informed consent. Lindsay agrees with this and

points out that children otherwise might feel they will somehow be punished if they do not participate (1999). The second reason was due to serious illness in my family which would have made travel to East Africa more problematic from my base in Luxembourg.

I examined options closer to home and sent a request to the head of CEIS on 16 November 2015 (see Appendix E), and subsequently received approval to conduct the research. CEIS was established in the 1960s, considers itself a flagship international school and is one of the pioneer IB schools (Bunnell, 2013) in that it adopted the DP during the IB's infancy period between 1969 and 1983 (Wallace, 1999 in Bunnell, 2013). The school became authorised to teach PYP and MYP a few years into the millennium.

After briefly liaising with the Head of Secondary, and sending the draft online questionnaire for approval, I was introduced to the MYP Coordinator (who I call Janice, a pseudonym) who subsequently became the main point of contact between the school and I throughout the research. After some introductory email exchanges, we had a Skype discussion on 30 November which clarified the purpose and methods of the research in more detail, and helped define ways in which the school was willing to recruit participants and support data collection. I emphasised the ethical aspects to be adhered to regarding the conduct of the research itself, the reporting of the research, and in seeking informed consent from parents, students and teachers. It was agreed that Janice would facilitate the recruitment of participants.

Janice met with all M4 students on 8 December to discuss the research and gave them two letters for their parents or guardians, one from me and the other from the school (see Appendices F and G). My communication with the parents and guardians (hereafter called parents) included the school's support for the study, a summary of how participants could be involved, the likely methods, and how I would strive to ensure confidentiality. To support this letter, I sent a link to an 8-minute video to Janice so that students and teachers could understand these aspects in more detail. Because of a low response rate from parents to these letters, and upon the suggestion of Janice, similar letters were sent to M5 students' parents. In all, I received written consent from the parents of 38 students (a response rate of approximately 26%) to

participate in the study. I also wrote a letter to teachers of M4 and M5 (see Appendix H) which was shared by Janice, with the result that 9 volunteered to participate.

In the next section, I turn to the methods to discuss why and how these took place.

### *3.6.2 The online questionnaire*

#### *3.6.2.1 Overview of the online questionnaire method*

Online questionnaires can be justifiably used in case study GT research (Punch & Oancea, 2014; Strauss & Corbin, 1998). Online questionnaires have the practical advantage of being able to get responses from many people relatively quickly, being low cost, minimising researcher bias because questions are phrased the same way (i.e. standardised) for each respondent, and having greater ease of anonymity so the participants are not influenced by trying to look good in their own eyes and in the eyes of others (de Leeuw, 2011; de Vaus, 2013; Gillham, 2008; Robson, 2011). Anonymity is especially relevant for adolescents, who are becoming increasingly sensitive to peer pressure and group norms (de Leeuw, 2011; Rudduck & McIntyre, 2007).

The disadvantages of online questionnaires have been widely reported and include data being affected by respondents' characteristics such as motivation, literacy skills and memory, that respondents won't necessarily report their beliefs accurately, and their potential to be too long and have imprecise questions (Gillham, 2008; Robson, 2011; Thomas, 2009). For adolescents, these issues are likely magnified (de Leeuw, 2011). Because they volunteered, I believed that respondents would be motivated. I was aware that there would be adolescents with limited English proficiency and I felt confident from piloting that the questions were simple and precise. Every effort was made to ensure all respondents could comfortably complete the questionnaire in less than an hour. De Leeuw (2004) recommended a Flesch-Kincaid readability level (this indicates US grade level) two grades less than the group targeted (M4 and M5 were equivalent to US grades 9 and 10 respectively) and so the questionnaire's 5.6 level, determined through the Microsoft Word application, was appropriate.

One final element of effective questionnaires is ensuring that words have the same meaning for everyone (Krosnick and Presser, 2010) and so the first open-ended questions (4 and 5) focussed on respondents' own definition of 'creativity', a term I suspected would be interpreted in different ways and which was used frequently throughout the questionnaire.

Biographical questions were asked before the open-ended questions, as is generally advised (Gillham, 2008). The open-ended questions asked about their beliefs and experiences in relation to creativity, and aimed to come across as simple, balanced and neutral (Gillham, 2008). To help respondents avoid feeling restricted in their thinking, a question near the end asked them "I may not have asked the best questions. Write here about anything else concerning creativity at [school name]", a strategy suggested by Gillham (2008). While the responses to this and other open-ended questions may involve complex analysis, Gillham implicitly recognises their role in GT to facilitate "considerable scope for genuine discovery" (2008: 35).

For overall design, it is widely acknowledged that organising questions in clearly defined sections or blocks facilitate clarity (de Leeuw, 2011; de Vaus, 2013). De Leeuw also advises, in the context of research on children, that each block has an introduction briefly describing what the next questions are about and what is expected of the respondent (2011). The questionnaire for students (see Appendix I) had 11 blocks or pages, and each had an introduction. The teacher questionnaire also had eleven blocks similar in layout to that of the students (see Appendix J).

#### *3.6.2.2 Conduct of the pilot questionnaires*

The student and teacher questionnaires were piloted at the school in East Africa originally planned to conduct the research (see Appendices K and L). The pilot questionnaire was conducted with respondents broadly similar to those in the actual study as generally advised (de Vaus, 2013; Lodico et al, 2006). They were in the same year levels, and the school adopted IB and became authorised to teach its MYP at similar times. The Bristol Online Survey (BOS, 2007) web-based survey tool was used. It is used mainly by staff and research students in universities and offered an alternative design to what respondents might already have been familiar with (such

as Survey Monkey or Zoomerang), which aimed to reinforce the academic and non-commercial aspects of the study. A link to the online questionnaire was sent to those teachers and parents who had previously given consent for participation. They were given the opportunity to complete it in their own time from 14 December to 28 December 2015. Five M4/M5 students and five M4/M5 teachers completed them. As well as getting information on the clarity and relevance of the questions indirectly through their responses, I also sought feedback on these aspects by asking them directly.

Feedback from the adolescent and teacher pilot questionnaires was encouraging. Respondents completed it, they seemed to show understanding of the questions in the same way (i.e. the questionnaire had high levels of reliability), they found it interesting, and they seemed to think the questions were relevant to them (this, as well as strong links between the questions and the initial research questions, indicated high levels of validity), all of these evidenced in the comprehensive way they responded to the questions in general, and more specifically to the questions seeking feedback on time for completion (question 24), on whether it was easy to follow and enjoyable, and if they had suggestions for changing, removing or adding questions (question 25).

*3.6.2.3 Conduct of the questionnaires*

An amended online questionnaire was subsequently developed for adolescents and another for teachers at CEIS. For the adolescent questionnaire, an online link was sent to Janice at the school with the result that the 38 adolescents completed the questionnaire on 22 and 25 January 2016. The characteristics of these adolescents are shown in Table 3.1. I used "volunteer sampling" in that all volunteers made up the sample (O'Leary, 2004: 110).

The adolescents were given time out of regular class to complete the questionnaire under the supervision of a teacher. The teacher was available for clarification questions from the students although no such questions were asked. After a brief acknowledgement that they were volunteering to respond to a questionnaire, the link to the online questionnaire was shared, after which there were no more directions

from the supervising teacher. The supervising teachers were instructed not to look at students' responses while they were completing the questionnaire (de Vaus, 2013), to keep a neutral position, and to make every effort to ensure that students felt safe to write their responses. My introduction to the questionnaire clarified the purpose of the research, the anonymity of the questionnaire, the confidentiality of the responses, and their right to opt out of the research at any time. I added that if they were interested in participating in group interviews with other students later in the study, then they could give up their anonymity by sharing their name and email contact, a tactic suggested by others (Gillham, 2007; Hayden, pers. comm., 14 July 2015).

Table 3.1: *Characteristics of all participating adolescents*

| **Characteristic** | **Variation** | **Number of students** |
|---|---|---|
| Gender | Male | 22 |
| | Female | 16 |
| # years at CEIS | >6 | 10 |
| | 6 | 3 |
| | 5 | 0 |
| | 4 | 4 |
| | 3 | 3 |
| | 2 | 7 |
| | 1 | 11 |
| Nationality* | Africa | 1 |
| | Asia | 9 |
| | Europe | 21,5 |
| | North America | 3 |
| | South America | 3,5 |
| Year level | M4 | 18 |
| | M5 | 20 |

* There were 23 countries in total, including those indicated by dual nationals. For the eight with dual nationalities, each country was allocated 0,5.

Nine teachers, from Europe and North America, volunteered to complete the teacher questionnaire. I wrote to them individually through email and invited them to complete the questionnaire through an online link which was initially open for a week from 3 February to 10 February 2016, but this was extended to 28 February upon the request of two participants. As with students, I asked for their names and

contact information if they wished to give up their anonymity and participate further in the research. Table 3.2 presents a summary of the teachers who completed the questionnaire.

Table 3.2: *Characteristics of all participating teachers*

| Characteristic | Variation | Number of teachers |
|---|---|---|
| Gender | Male | 4 |
| | Female | 5 |
| # years at CEIS | >3 | 7 |
| | 3 | 0 |
| | 2 | 2 |
| | 1 | 0 |

This exploratory online questionnaire was conducted as a first step in data collection and analysis because it provided a general overview, in a relatively short period, of students' and teachers' perceptions of the nature of creativity (research question 1) and how it was fostered (research question 2). It also gave an indication of the degree of alignment between adolescents and their teachers (the third research question). The questionnaire also brought out concepts that were explored further in the focus groups through theoretical sampling. I could more confidently choose themes that mattered to adolescents, as well as explore relationships between themes, before meeting with them face-to-face in the focus groups.

### *3.6.3 Focus group interviews*

#### *3.6.3.1 Overview of the focus group method*

Focus group interviews (or simply 'focus groups') are a distinct type of group interview which have two defining characteristics. First, the 'focus' is on one or a few issues predetermined by the researcher, and second, participants are encouraged to interact with each other (Kamberelis, & Dimitriadis, 2013; Stewart et al, 2007). I was both an interviewer and moderator who ensured that participants listened and

responded to each other and who stayed on track with the general topic of creativity. To maximise the levels of interaction, engagement, discussion and diversity of opinions, the ideal number of participants in a focus group is generally considered 6 to 12 (Stewart et al, 2007), although I agree with Morgan that group size, aside from very low or large numbers, is not a defining characteristic of a focus group (1997). For example, the number can be lower if the participants know each other and higher if a diversity of perspectives is sought.

Focus groups have been widely used in educational research in areas such as evaluation of curriculum and perceptions of instruction (Kamberelis, & Dimitriadis, 2013; Lodico et al, 2006). They have been encouraged in research on adolescents' perceptions within the fields of health and wellness (Peterson-Sweeney, 2005) and within education (DeFur and Korinek, 2010; Lassig, 2013; Shaunessy & Alvarez-McHatton, 2009; Steinberg & McCray, 2012), including within schools offering an international education (Foley, 2013; Martin et al, 2016; Savvides, 2008; Zhang & McGrath, 2009). Focus groups have also been used widely with teachers working in international schools (for example, Deveney, 2007), and some have involved both teacher and adolescent focus groups (Bryant et al, 2016; Martin et al, 2016).

A common drawback attributed to focus groups refer to how participants' responses may rely heavily on the context of the discussions (Barbour, 2007), which raises questions about reliability. Yet, qualitative researchers recognise that individuals can change or deepen their perspectives based on what others say and upon longer personal reflection. As indicated by Barbour, the process of thinking is highlighted more in focus groups than, for example, questionnaires (2007). Indeed, I often observed how the synergy in a focus group led participants to respond to a line of inquiry in greater depth as the discussion developed. Questions about validity revolve around whether participants tend to reveal what they think and whether they would respond differently outside the focus group. Barbour suggests that having participants that know each other, as in this study, may "facilitate more rounded or reasoned responses" (2007: 34). In addition, I made every effort to develop a risk-free environment during the focus groups in which I made clear that my opinion on themes was irrelevant to the study and that I was not aiming for consensus. Finally,

participants did not find discussions about creativity a sensitive topic to discuss or listen to, and so diverging viewpoints were not considered controversial.

#### *3.6.3.2 Conduct of the focus groups*

I prepared semi-structured interview guides with open-ended questions for each session. I was flexible in the use, order, and wording of the questions, and I asked extra ones when I thought it was appropriate to do so (Corbin & Strauss, 2015; Robson, 2011; Stewart et al, 2007). While the interview guide is understandably discouraged in Classic GT (Glaser, 1998), it tends to be seen more flexibly in other GT versions. I agree with Charmaz's recommendation for novice GT researchers like myself to use one because it helps provide a logical pacing of potential questions, avoids leading questions and gives the interviewer and interviewees direction (2008).

Additionally, in meeting with the participants for the first time, the interview guides helped me to ask clear questions, focus on exploring themes that emerged from the questionnaire, and to put me at ease (and presumably the participants). Planning the questions and prompts over an extended time also helped me remember them during the sessions and enabled me to fluidly link responses to prompts or new questions, as well as stay patient with extended silences. It is worth noting that I did not pilot this interview guide because it built on information provided by the participants in the questionnaire (Corbin & Strauss, 2015).

The open-ended nature of conversations allowed new themes to emerge that were relevant to the participants (Cohen et al, 2013; Kitzinger, 1995) as well as give opportunities for participants to qualify their responses (Stewart et al, 2007). Thus, focus groups are particularly suited to GT studies, a view shared by Dick (2007). In encouraging conversation among participants rather than giving simple responses to the moderator's questions, Kitzinger highlights how focus groups can help participants to explore and clarify their views in ways that would be less easily accessible in 1-to-1 interviews (1995). For example, Lewis describes 10-year old students' understanding of learning difficulties being enhanced in a group where they challenged and extended each other's ideas as well as introduce new ones (1992).

Disadvantages noted for focus groups often refer to how group dynamics and power hierarchies affect who speaks and what is said (Robson, 2011). The composition of the group inevitably influences the data produced, especially if there are dominating or opinionated participants (Bryman, 2012; Morgan, 1997; Stewart et al, 2007). I needed to manage all interviews in such a way that everyone had an equal opportunity to share views, and that voices were not silenced.

There are special problems in interviewing young people, including in focus groups (Cohen et al, 2013; Simons, 1981), and these are summarised in Table 3.3. While some pertain more to younger children, they can also apply to adolescents. I used various strategies to overcome these potential problems (see column 3), but in all cases, I needed to be a non-judgemental moderator who genuinely wanted to inquire into their experiences and perceptions.

All focus groups were audiotaped and lasted from 30 to 46 minutes, which is less than the 60-minute minimum time often recommended (Hydén & Bülow, 2003; Wibeck & Oberg, 2007), although Robson (2011) and Bryman (2012) avoid giving times, with the latter suggesting that it is quality rather than quantity that matters.

Aside from the first focus groups with adolescents and teachers, visual and interactive prompts were used to help keep discussions lively and elicit opinions that otherwise would be difficult to capture. For example, adolescents were asked to prioritise cards showing characteristics and definitions of creativity that emerged from the student questionnaire and first focus group (see Appendix M). Participants were also shown cartoons depicting various themes that emerged from previous data and which I sought to explore further (see Appendix N for an example). These strategies enabled participants to have lively discussions without my input; indeed, I was silent for 16 minutes in FGA2.

The synergy within the focus groups allowed previous themes to be explored and new ones to emerge. Some of these themes were also discussed in online discussion forums and the individual and paired interviews.

Table 3.3: *Weaknesses associated with interviewing children*

| ***Problem*** | ***Why is it a problem?*** | ***Steps I took to minimise problem*** |
|---|---|---|
| Children may feel apprehensive and therefore quiet during the focus group/ interview (Costley, 2000) | May limit data. | – I always tried to see the focus groups and interviews as social encounters rather than simply data gathering exercises.<br>– I explained the purpose of the research and session, stressing that I was not looking for agreement among them or with me.<br>– I explained issues of data confidentiality and anonymity at the beginning of each focus group/interview session.<br>– I attempted to help make the sessions fun through my comments and informalities before the sessions began.<br>– I organised interactive and visual activities during focus group and interview sessions.<br>– I offered a choice between 1-to-1 and paired interviews. |
| Some children may dominate the discussions (Dockrell et al, 2000) | May limit data. | – While this did not happen to a significant extent, I switched topic on one occasion when I felt that one person was spending a long time repeating himself on one topic, and I sensed others were getting bored. |
| The students have limited conceptual and linguistic skills (Morrison, 2013; Simons, 1981). | Students may not be able to communicate their thoughts in sufficient depth. | – I attempted to provide a safe environment where everyone regardless of English language proficiency could contribute.<br>– I tried to use straightforward language without ambiguities.<br>– I gave prompts/probes, choices, and questions.<br>– I provided other forums for communicating (discussion forum, email).<br>– I asked open-ended questions.<br>– I avoided double barrel questions. |
| I may listen too little and suggest answers (Simons, 1981) | Researcher bias. | – I refrained from directing the interviews.<br>– I listened carefully to early recordings to check for my neutral role. |
| Students may try to give 'right' answers, partly because I'm an adult (Morrison, 2013; Simons, 1981). | Invalid data - the data will not reflect students' perceptions. | – I avoided leading questions.<br>– I asked open-ended questions.<br>– I avoided making judgements on students' comments. I simply accepted them and probed if necessary.<br>– I made it clear at the beginning of focus groups that my opinions were not important in the study. |
| Groups can drift off the topic easily (Gallagher, 2009) | Irrelevant data. | – This is only a problem when the topic is clearly not relevant to the topic of creativity (e.g. if they discussed the lunch menu). Off topic conversations in relation to my questions were encouraged and often provided insightful perspectives relevant to the research.<br>– I believe my significant experiences in chairing meetings and focus groups with children and adults were helpful. |

### *3.6.3.3 Organisation of the adolescent focus groups*

Out of the 38 adolescents who completed the questionnaire, 13 confirmed they wished, or were considering, to participate further in the study. They represented a

range of year levels M4/M5 (5:8), male/females (8:5), nationalities (15, including all those represented by duals) and number of years at the school (from less than 1 year to more than 6). 10 were invited to participate in the first focus group, a relatively high number that aimed to bring out diverse themes and perspectives, and to minimise my presence so that they could comfortably discuss.

I was tempted to invite all 13 because of a previous experience during my Master's research where unselected students were disappointed and unsure why they were excluded, with the result that I invited all 27 participants to three focus groups; however, I considered 13 too many, as commonly advocated in the literature. The three students who were not invited did not share any new perspectives or insights in the questionnaire and so it was decided to omit them. Their personal information also did not add to the diversity of the group, and I did not think anyone would know they were omitted and I intended to invite them to the second focus group. The question of inclusive participation is brought up by Greig et al in the context of whether it is ever justifiable to exclude children with special learning or physical needs (2007). Perhaps this can be extended to all children when it is practically feasible to include them, even if it compromises theoretical sampling.

The 10 were selected based on personal information (i.e. nationality, gender, grade and years at the school) and on the diversity of their responses, in what O'Leary refers to as "handpicked sampling" (2004: 110). For example, Bela mentioned how boredom helped her be creative although no one else mentioned this. While most students linked creativity to many subjects, I also chose some who associated it with the arts. This sampling for a range of participants' attributes and diversity of perspectives allowed exploration of the limits of the phenomenon of creativity (O'Leary, 2004).

While consent was given by the guardians for the children in the study to participate, the students themselves also signed consent forms before the sessions (see Appendix O), as suggested by Greig et al (2007) and by BERA's ethical guidelines for educational research (2011).

The first student focus group (FGA1) was held on 8 March 2016. I requested to the school that it take place in a room less formal than a standard classroom, and to avoid

scheduling the session during a break or lunch. Neither of these requests could be accommodated, and so the session took place during the students' lunchtime and in a standard classroom. The school provided the lunch and I provided extra snacks and refreshments. It took some time to start the focus group as we waited for lunch to arrive and to re-arrange the furniture (we had to wait for a class to finish beforehand). Consequently, the session only lasted 30 minutes, shorter than anticipated. We sat in chairs in an open circle without a centre table, which enabled everyone to see everyone else. Before starting, I once again stressed my commitment to confidentiality and that they could stop their participation at any time without fear of consequence. As with every focus group and interview, I asked them for their consent to audio-record the session (it was always granted), explaining that the recordings would not be shared with anyone unless I had a legal obligation to. I explained that I would likely use excerpts from the conversations in my thesis but that I would use every precaution, including pseudonyms, to conceal the identity of the speakers (see my preliminary words in FGA2 in Appendix P). I took notes of the order that people spoke to avoid confusion during transcribing (see Appendix P for an example of a transcribed interview). I had twelve questions prepared, and some of these had prompts that could be used if necessary (see Appendix Q). Two of the ten questions focused on research question 1 while the rest related to research question 2.

The second (FGA2) and third (FGA3) adolescent focus groups took place in a standard classroom on 12 May during regular class times. School logistics did not permit interviewing M4 and M5 students together, and so it was decided to interview them separately. All adolescents were invited. All five M4 students participated in FGA2, and four of the eight M5 students participated in the FGA3 session later. Of those who were not present, two explained they were going to be absent. Two other students approached me at the beginning of FGA3 to explain they were staying for their regular mathematics classes but wanted to remain a participant in the future. FGA2 lasted 46 minutes and FGA3 lasted 43 minutes. Again, I took a semi-structured approach and I prepared open-ended questions and prompts beforehand (see Appendix R).

*3.6.3.4 Organisation of the teacher focus groups*

The first focus group with teachers (FGT1) took place on 8 March after the FGA1 session, and after classes had finished. I made it clear with teachers that the themes I wished to explore with them were those that were considered important by students. By having the teacher session later, I could not only ask similar questions, but I was also able to explore unexpected themes that emerged from FGA1. Thus, I amended the teacher interview guide by making hand edits after FGA1 (see Appendix S).

All five teachers who volunteered to participate further through the questionnaire were invited to the focus group. Two were unable to join, one due to an unexpected absence on the day and another due to a prior engagement. Thus, FGT1 consisted of three participants and lasted 44 minutes. It was held in a school meeting room which did not resemble a typical classroom.

The second focus group with teachers (FGT2) took place on 12 May. For unavoidable school logistics, this session occurred before FGS2 and FGS3 which took place on the same day. While this was not ideal, it allowed me to prompt emerging themes which the teachers had not discussed in the first session. This session also took 44 minutes and as a meeting room was not available, it took place in a standard classroom. FGT2 consisted of two participants from FGT1 and one new participant. The two other teachers were unable to attend due to being absent from school.

### *3.6.4 Online discussion forums*

*3.6.4.1 Overview of the online discussion forum method*

Online discussion forums allow participants to have written rather than verbal discussions. They are logistically practical (no travel, audio-recording or transcribing), have potential to be inclusive, and give autonomy of time to the participants (Bryman, 2012). I set up asynchronous discussion forums which meant that participants could view and post comments whenever it was convenient for them over an extended time. I did not consider the discussion forum as a type of online focus group since the dynamism and immediacy that are characteristic of focus groups were largely absent (Fox et al, 2007) and I wanted many discussions (threads)

taking place at the same time. The discussion forum aimed to provide an alternative opportunity for participants to interact with each other, and to give them more time to reflect and think before sharing their perspectives, the latter point seen by De Wever et al as an advantage over synchronous forums (2006). The participants encouraged me to start a discussion forum, considering it a convenient way for them to share their thoughts with each other and with me. Two of the adolescents who were unable to attend the second focus group also requested the forum.

#### *3.6.4.2 Organisation and conduct of the online discussion forum*

An adolescent and a teacher online discussion forum were initiated on 2 May before the second round of focus groups. All 13 students and 5 teachers who gave up their anonymity in the questionnaire were invited to private Google Group discussion forums (one for adolescents and one for teachers). Such a large group is acceptable in asynchronous forums since their extended time periods makes it easier to moderate and for participants to contribute (Bryman, 2012). I sent a personal email to them on 2 May (see Appendix T) which was followed up immediately with an automated and individualised Google Group invitation. 8 students and 4 teachers accepted the invitations. While students and teachers in the focus groups showed enthusiasm for having an online discussion forum beforehand, there was limited participation with 4 students and 2 teachers posting for a total of 10 posts (excluding mine). I sent reminders to participants and at the same time stressed that there was no pressure to participate in the forum if they did not wish to. Both discussion forums had a welcome message which included a link to the personal video describing the research in the event they had not seen it, guidelines for posting, and active encouragement to initiate their own discussions rather than follow what was there. All these elements are considered helpful to encourage participation (Bryman, 2012). The relative lack of success of the discussion forum in recruiting participants has been reported in other studies (for example, Bray and Schatz, 2013). Bryman (2012) suggests that relatively few participants tend to accept invitations to join asynchronous online focus groups, giving an estimation of between 5 and 20% although it seems that this refers to inviting people who are not known to the

researcher, who haven't been involved in the research up to that point, and who are not a natural group.

The adolescent forum (see Appendix U) had three separate 'discussion threads' (all concerning research question 2) while the teacher forum (see Appendix V) had four (one on research question 1 and three on research question 2). I started a post in each thread to help initiate discussion. No new discussions were started by either teachers or students. My posts in response to participants' commentaries aimed to probe for further insights, while I recognised that these probes are generally less effective than in face-to-face discussions because respondents can more easily ignore or forget them (Bryman, 2012).

### *3.6.5 Individual and paired interviews*

#### *3.6.5.1 Overview of individual and paired Interview methods*

Individual or 1-to-1 interviews are a common method in qualitative educational research and are ideal when participants feel comfortable with the interviewer and are willing to share their ideas (Creswell, 2012). Many of the students and all the teachers who participated in the focus groups indicated their willingness to meet me in a 1-to-1 interview. By exploring what could be considered the complex and ambiguous nature of creativity, students and teachers had opportunities to talk at length and in depth about matters that they felt were important.

Paired or 1-to-2 interviews involve one interviewer (typically the researcher) and two interviewees, the latter engaging with each other in discussions (Wilson et al, 2016). While paired interviews have received little attention as a qualitative research method (Wilson et al, 2016), they have been increasingly used and advocated in research with young children and adolescents (Gallagher, 2009; Highet, 2003; James & Fox, 2016), where sometimes they can choose between it and an individual interview (Brooks & Magnusson, 2006). James and Fox conducted semi-structured paired interviews with children aged 8 to 11 to explore their use of humour, justifying this approach over 1-to-1 interviewing in how it creates more balance between the interviewer and participants, builds more rapport, creates a more relaxed setting,

and ultimately taps on the synergies of the interaction between the participants to exchange ideas to enable them to generate greater depth of thought (2016). Nevertheless, the authors acknowledge that, compared to 1-to-1 interviews, paired interviews might have the opposite effect in restricting some children to expand on their ideas because of the presence of their partner (2016). This latter point reflects the difficult task of the interviewer to strike a balance between ensuring that interactions between the pair are inclusive and dynamic while creating space for each to explain, justify and develop ideas through probing and prompting. It involved me listening carefully to what was said and how, and returning to comments made earlier which may not have been fully clarified or when the other student interrupted. It is perhaps obvious to state but comfortable and dynamic interactions between the two participants in a paired interview are usually optimised when they know each other (Ritchie & Lewis, 2003) and further so when they have a chance to choose their partner, as in this study. For one scheduled paired meeting, one participant did not come, and the partner expressed a wish to carry on and have a 1-to-1 interview instead.

#### *3.6.5.2 Organisation and conduct of the interviews*

On 8 June, with a reminder the following day, I invited all 13 adolescents and 4 teachers who had participated in the focus groups to an interview (see Appendix W). I gave them a choice to meet with me one-to-one or to have the interview with another of the invited participants. 7 students agreed to meet with me although on the day I only met with 6. Of the remainder, 4 excused themselves due to prior commitments, one gave no reason, and another did not respond. Four adolescents opted for a paired interview while the rest of the students preferred a 1-1 arrangement. All four teachers opted for a 1-to-1 interview. The student and teacher interviews all had a semi-structured format and I had ten open-ended questions, each with numerous prompts, that I was interested in asking while recognising that I was unlikely to ask them all, that I would likely ask them in different order to ensure the conversation was fluid, and that I might ask other questions (see Appendix X).

All interviews were conducted on 15 June and ranged from 22 to 41 minutes (mean of 32 minutes for both adolescents and teachers). It was not ideal to carry out the interviews on one day, but this seemed the only possible logistical arrangement as the end of the school year approached and other days proved too difficult due to school events and my availability. It meant that I conducted nine interviews in one day which summed up to nearly 5 hours so tiredness might potentially have influenced the conversations although I felt surprisingly concentrated and energised throughout. Second, it made theoretical sampling (of concepts) challenging since I had to analyse data generated from each interview in a very brief period to continue exploring themes and hypotheses that were emerging during the day.

To document my analysis on the day, I wrote hand notes on the interview guide after each session (for an example, see Appendix Y). This meant that during the interview I was attentive to how analytical categories were possibly developing although I did not allow this to predominate my thinking during the interview, and placed my focus on listening, observing and responding. Ritchie and Lewis outline the danger of trying to analyse data during the interview, stating emphatically that it is "deleterious to be thinking about analytical constructs, or considering how what is being said sits within analytical themes, during the interview since this means that the researcher will not be giving their full attention to what the participant is saying" (2003: 144). Legard et al rightfully pay homage to the challenges faced by the interviewer in areas such as listening, understanding, being alert to contradictions, deciding what to follow up on, picking up signals, keeping an eye on the recorder, managing distractions, being neutral but engaged, and pacing the interview (2003). Yet, in addition to looking for concepts to saturate in later interviews, I also had a responsibility during interviews to conceptualise what was being said to help decide how to respond and whether further questions would help the interviewee to clarify or extrapolate on their perceptions. Recognising that interviews are primarily a social encounter rather than simply a data collecting exercise and ought to be a pleasant experience (Cohen et al, 2013), I made every effort to put the interviewees at ease by initiating our encounter through idle chat (as suggested by Mears, 2009), gradually turning to the purpose of the interview (Cohen et al, 2013) and then bringing up questions related to the research. As they shared these perceptions, I took advantage of my analysis of previous data and of the conceptual framework guiding the formulation of my

interview questions to more easily bring a level of analysis during the interview itself. In other words, I tried to prepare myself beforehand to be as theoretically sensitive as possible to what was being said, so that I could maximise my attention to the interviewees, and not the analysis, as Legard et al demand (2003). The interviews focused on saturating conceptual relationships relating to the second and third research questions.

## 3.7 Evaluating GT research

### *3.7.1 Questioning validity and reliability in qualitative research*

Like all paradigms of inquiry, postpositivist research demands rigorous attention to quality; what is sometimes referred to as reliability and validity (Robson, 2011). Validity relates to the accuracy and value of the interpretations of the research while reliability is the extent to which a study or procedure can be replicated and the degree in which other researchers would arrive at the same conclusions if they studied the same case using the same procedures (Bryman, 2012). While these two terms, reliability and validity, and the criteria for evaluating them welcome general agreement within the realm of quantitative research, the application of these in qualitative research has been questioned (Cohen et al, 2013; Hammersley, 1992 in Lewis & Ritchie, 2003; Lincoln et al, 2011; Thomas, 2009).

This is because reliability cannot apply equally to qualitative research as it would be naïve to think the unique complexity of a study can be replicated in another context, no matter how similar they may appear. It is also naïve to believe that another researcher would arrive at the same conclusions if they conducted the same research with the same sample; indeed, another researcher might find another equally plausible account (Maxwell, 1992; Strauss & Corbin, 1998). These two perspectives on reliability are held by critical realists working in the postpositivist mode of inquiry.

Validity, while important in qualitative research, is seen to take a different form to that in the scientific, quantitative arena. Instead, validity is less about controlling variables and ensuring the data instrument (i.e. method) is collecting accurate and

relevant data (the social world is too complex for that), and more about ensuring that causal relationships in data are carefully analysed and reported. In other words, validity is less about data and methods like in scientific, quantitative research, but more about the researcher's analytical account which should demonstrate an in-depth understanding of the study (Maxwell, 1992). Nevertheless, it was important to ensure that I was applying methods appropriately, and I have outlined how I tried to do so in section 3.6.

Several different criteria have been suggested for evaluating GT studies (Charmaz, 2006; Corbin & Strauss, 2015; Creswell, 2012; Holt & Tamminen, 2010; Strauss & Corbin, 1998). Corbin and Strauss usefully suggest two broad components or criteria of a quality GT study - its methodological consistency and its quality and applicability (2015). *Methodological consistency* refers to the researcher upholding all the central procedures of a methodology in a study (Corbin & Strauss, 2015; Flick, 2009). It would, therefore, be inconsistent if few procedures of GT methodology were adopted or if other methodologies were incoherently mixed with it (Corbin & Strauss, 2015). The focus of methodological consistency is on process. The *quality and applicability* of the study refers to the degree that the analysed data is appropriately presented, robustly defended, and discussed within the wider realm of applicability and relevance. The emphasis is on theory. I will now respond to these two components of process and theory, and use Corbin's checkpoint questions (2015) as a general guide to justify how I strove for objectivity, repeatability, accuracy and usefulness.

### *3.7.2 Methodological consistency*

The central procedures in GT are the delineation of concepts and their development, constant comparisons, saturation, and theoretical sampling, and these would need to be evident in this study (Corbin & Strauss, 2015: 347). These are now discussed.

I have attempted to describe and illustrate the first three procedures (delineation of concepts, constant comparisons and saturation) in section 3.4.4. Concepts were developed from early on to its final stages. Table 4.9 in chapter 4 outlines these final concepts. Section 3.4.4 also illustrated the inductive process of constant comparisons which involved me constantly labelling and comparing data, resulting in

relationships and categories being identified at increasing levels of abstraction. While I attempted to ensure theoretical saturation of categories, I realised after data collection had finished that there were opportunities to explore some concepts more. For example, I realised that adolescents' perceptions of connections between interdisciplinary learning and creativity remained relatively unexplored.

While I used a mixture of handpicked and volunteer sampling for selecting participants, theoretical sampling involved a much more extensive process. I continuously sought and subsequently tested concepts that indicated a cause and effect relationship. For example, in section 3.6.3.3. I explained that Bela was invited to the first focus group, partly because she mentioned boredom in the questionnaire and so I wanted to test the hypothesis that boredom in classes was perceived by adolescents to encourage their creativity. However, adolescents believed that while many ideas are generated when bored or daydreaming, these ideas were rarely followed through in the curriculum (although they sometimes did in out-of-school contexts). Thus, this hypothesis was rejected, but the relationship between 'follow-through' and 'defining creativity' was pursued afterwards. In other words, concepts were explored based on data rather than my pre-conceived notions.

### *3.7.3 Quality and Applicability*

There is some overlap between this component and methodological consistency, in that the final 'theory' reflects the analysis used to produce it. The core category is clearly outlined in the next chapter as is its relationships with the major categories, the sub-categories and their properties. Section 5.4 in the final chapter responds to questions regarding the quality of the theoretical model that I propose, and how applicable it is to CEIS and other schools.

Two important aspects to developing theory faithful to the data were ensuring I continuously reflected on the data and I received feedback from participants. As mentioned in section 3.4.4, memos were an important reflective tool during all stages of data analysis. I sought feedback from the participants in two areas. I asked them to check the transcript of the 1-to-1 or paired interview and offered them an

opportunity to expand or change anything. Second, I sought their feedback on my first full analysis, and some relatively minor changes were subsequently made.

### 3.8 Ethical aspects

The study followed the ethical guidelines of the British Educational Research Association (BERA), in which special attention is dedicated to research with children (2011). Ethical aspects have already been discussed in areas such as obtaining consent and how I sampled for participants. To reiterate, I explained and reminded participants throughout the study that I would ensure data was kept confidential and that I would use pseudonyms to conceal the identities of participants. This information was communicated in detail in my 8-minute video introduction, as well as in consent letters (see Appendices F, H and O), the introductions to the questionnaires (see Appendices I, J, K and L), focus groups (see Appendix P and my introductory words), and in the interviews (see Appendix W). In all consent forms and in frequent written and oral communication, I clarified to adolescents and teachers that they had a choice whether to participate or not, that they could withdraw at any stage, that they understood what their participation involved, and they knew how I was maximising confidentiality (BERA, 2011; Greig et al, 2011). Before each focus group and interview, I asked for their consent to audio-record the session.

I will now look at the ethical dimensions of this study through my consideration of people, and I will also briefly explain my ethical responsibilities with data analysis and reporting.

It was important to establish a respectful rapport and communicate my appreciation (verbally and through gifts) with Janice, the MYP Coordinator, who facilitated so many of the logistical aspects of doing the research in the school (see Appendix Z for an example). As well as thanking Janice on site through words and small gifts after each visit, I wrote emails of appreciation to her after each visit and copied in the Head of School and Head of Secondary to these communications.

Similarly, I kept a similar stance in my verbal and written communication with teachers who had volunteered to participate further in the questionnaires (see Appendix AA for an example). I appreciated the comment from Temma who in the 1-to-1 interview redirected my question about the school's encouragement to participate in the study to my encouragement:

> *You were encouraging, you know. We were talking about that, that you made us feel like every one of us were the key people that were needed for the research. OK, we said, well, that's obviously not true but you made me feel like what I had to say was very very necessary.* (IntT)

On the three occasions that I was on site for focus groups and interviews, I showed my appreciation to the teachers by offering snacks and juices during the focus groups and gave them each a bottle of wine after each focus group and interview session.

I also provided snacks and juices in the student focus groups as I did with teachers. After each focus group and interview session, I gave them each a health snack. On my last visit, I gave chocolate to all those who had participated in the focus groups. In all written communication with students, I used a similar style as with adults (see Appendix AB for an example).

By having a respectful, humble and open demeanour with all I met at the school, I hoped that I and the research would be viewed as trustworthy and well-intentioned. It was not an insincere or unnatural act although I was conscious of its importance.

Finally, I had an ethical responsibility to the school and participants to ensure data analysis was thorough, honest and useful. They dedicated their intellect and time to the study, and they deserved the highest level of professionalism and academicism. It emphasised the need to follow the procedures of GT consistently.

## 3.9 Chapter Summary

I argued that my critical realist philosophical stance and postpositivist mode of inquiry fit well with Straussian GT methodology. By describing the methods of data collection and GT data analysis in this case study, I attempted to show that I chose

appropriate data sources and applied GT methodology appropriately so that findings could be both useful and grounded in the data. Throughout the chapter, I discussed the steps I took to ensure the ethical integrity of the study.

# Chapter 4: Presentation and Analysis of Data

## 4.1 Introduction

This chapter presents students' and teachers' beliefs about the nature of creativity and how it is fostered in the curriculum. This presentation and analysis of the data aim to respond to the case study's research questions:

- How do adolescents define creativity?
- How do adolescents perceive creativity being encouraged by teachers?
- Between adolescents, teachers and researchers, how aligned are beliefs about fostering creativity in the curriculum?

As a grounded theory study, I describe conceptual categories that emerged from the data, and how these led to the generation of a core conceptual category and a theoretical model.

I have used quotations to illustrate what students and teachers said orally and in writing. I have not edited the quotations, and this aimed to legitimise what participants said. I have also avoided inserting [*sic*] to avoid distracting and authoritative disruptions to the flow of commentaries. However, whenever the need arises, I have included extra information in non-italicised square brackets, either to clarify the topic or person referred to or to add another event such as a laugh.

Names of participants are pseudonyms and do not aim to reflect personal information such as name, ethnicity, nationality or religion. Table 4.1 gives the gender for each participant, but information is minimised to help protect the identity of each participant. I am represented by EO in focus group and interview excerpts.

The data sources from which the data arise are also included, and they have codes as outlined in Table 4.2. It is important to stress again that teacher discussions were directed to themes that the adolescents found relevant, and so teacher data aimed to add meaning and context to adolescents' perceptions.

Table 4.1: *Pseudonyms of adolescents who participated in the focus group*

| ***Adolescent*** | ***Gender*** |
|---|---|
| Ashe | Male |
| Bela | Female |
| Cian | Male |
| Duma | Male |
| Egon | Male |
| Inma | Female |
| José | Male |
| Lara | Female |
| Marc | Male |
| Nora | Female |
| Rory | Male |
| Suda | Female |
| Toni | Male |

Table 4.2: *Codes for data sources*

| ***Code*** | | ***Source*** |
|---|---|---|
| EmlA | : | Email communication from adolescent |
| EmlT | : | Email communication from teacher |
| FGA1 | : | Focus group 1 with adolescents |
| FGA2 | : | Focus group 2 with adolescents |
| FGA3 | : | Focus group 3 with adolescents |
| FGT1 | : | Focus group 1 with teachers |
| FGT2 | : | Focus group 2 with teachers |
| IntA | : | 1-to-1 or 1-to-2 interview with adolescent(s) |
| IntT | : | 1-to-1 interview with teacher |
| ODFA | : | Discussion forum with adolescents |
| ODFT | : | Discussion forum with teachers |
| QueA | : | QueA: Online questionnaire for adolescents |
| QueT | : | QueT: Online questionnaire for teachers |

Quotations were selected based on a range of factors. Some were chosen because they were succinct and representative of what many participants wrote or said. Others

were selected for their emotive or poetic style. In some cases, excerpts from conversations were used to illustrate flows of thought or differences in perspectives. Finally, to show a range of viewpoints or angles on one theme, several quotations are sometimes used. Whenever speakers or writers repeat themselves or make unrelated points, I have used "…" to help bring out the participants' central messages. For similar reasons, I have used "…" on a separate line to replace full responses by participants.

While I have tried to be consistent with the use of terminology, it seemed appropriate to use some interchangeably for greater fluidity in communication. The terms 'adolescent' and 'student' are used interchangeably with greater use of the former to emphasise the age group and its less subservient tone. I have also used 'subject', 'discipline' and 'domain', as well as 'encourage' and 'foster' creativity, interchangeably. Finally, in discussing the conceptual categories that emerged from this grounded theory study, I have tended to use 'category' but 'theme' and 'concept' are also used.

The findings presented in this chapter aim to add to the literature on creativity by offering insights into how adolescents, rather than adults such as educators or researchers, perceive the nature and encouragement of creativity in the curriculum.

## 4.2 Perceptions of the nature of creativity

This section examines the findings in relation to the first research question "How do adolescents define creativity?". I outline what adolescents believed were important aspects of creativity. I did not attempt to ask the participants to agree on one definition. While various data sources are used in this section, they predominantly come from the questionnaires and first focus groups with students and teachers. As the students wrote and spoke about the nature of creativity, their perceptions seemed to fall into six main themes: novelty, value, disciplinarity, remixing ideas, follow-through, and mindset. These themes arose from the data analysis procedures outlined in section 3.3.4

While these themes are discussed separately, the adolescents moved fluidly between them. Teacher data which fell into these adolescent-generated themes are also integrated into the discussion.

### *4.2.1 Novelty*

Adolescents associated creativity with words such as unique, different, original, novel, new, individual, innovative, fresh, exclusive, uncommon, special, imaginative and unexpected. There was no consensus among adolescents or teachers of which word to use to describe this 'novelty' criterion for creativity.

These words were used to describe people, products and processes. It was not uncommon for adolescents to define creativity through more than one of these lenses as illustrated below, with my notes in brackets:

> *I would consider creativity as a trait* [person] *that allows you to express yourself in multiple ways. It can also be interpreted in your thought process and the way you think/perceive concepts, thoughts, ideas* [process]*, etc.* (Suda, QueA)

As adolescents discussed creativity interactively, they tended to view creativity through all these lenses interchangeably and simultaneously.

Adolescents often spoke of creativity through the lens of a product, the nature of which could take many forms, tangible and non-tangible.

> *Creativity can come in any form: written, drawing, spoken.* (Bela, FGA1)

> *Even creativity does not always have to be in the form of creating something. It could also be in the form of mentally finding something new.* (Nora, FGA3)

Adolescents played down the need for uniqueness or with being entirely different. In other words, creative products did not have to be radically different to others that already existed, as Rory made clear:

> *It could be like maybe similar to someone else's idea or someone else's thing but then it's your way to do it like you thought with your own mind and you did it by yourself.* (FGA1)

Indeed, they didn't have to be different at all if it was new to the creator. This equates to the concept of personal or mini-c creativity as discussed in section 2.3.

Like students, teachers placed varying emphases on the person, process and product in their definitions of creativity. Similarly, these lenses for creativity moved fluidly between each other in individual commentaries and conversations. Teachers agreed that creativity included mini-c creativity, without using this terminology. Temma gave an example from the beginner language class taught by another participant that a student could be creative by putting together a sentence in a way unique to them:

> *… I think a lot of your* [subject] *students are pretty low level. They're just beginning … But once they have the vocabulary, … students can use their creativity to combine those sentences in a way or a different scenario that might never have been expected. So, it could look very narrow but it's an extremely creative experience.* (FGT1)

This section highlighted that adolescents, as well as teachers, described creativity from various lenses (person, process and product) and they moved interchangeably between them as they discussed creativity individually and in conversation with their peers. They also concurred that creativity ranged from personal to social novelty. Thus, adolescents and teachers tended to have a similar conceptual understanding of the need for novelty in creativity.

### *4.2.2 Value*

As with novelty, both adolescents and teachers stressed that the product arising from creativity could range from having a personal impact (to only the creator) to having a social impact (to peers and the school community). Personal impact arose from products that were not shared or had no social impact. Having social impact was frequently associated with creativity, as Toni explained:

> *Mainly if I think about creativity I think about something that is interesting and grabs someones attention and makes them think about it.* (Toni, QueA)

Furthermore, a creative idea could go further and inspire others to action, in this case, to create something else themselves:

> *Creativity is also kind of a chain reaction in a way because someone can be inspired by someone else's idea even if it's not a physical product or if it's not like a giant painting on the wall, maybe it's just a spoken idea. It can still be inspiring to the next person to inspire a different idea or something else from that to broaden their creative variety in a way.* (Bela, FGA1)

While it was sometimes important to explain the value of one's creative products to others, there were times when its value was solely personal:

> *If it is an idea that is meant for other people or meant to solve a problem that you believe connects to other people, then of course you need other people to understand why this is important. But if it's more for yourself, personally, maybe you don't. This is going more back to like a painting, maybe this is just meant for you to express emotion. It obviously depends on the situation.* (Nora, FGA)

It was rare for adolescents to describe their creative products' wider social impact on for example communities outside that of the school.

Creativity was frequently associated with the values of freedom and personal expression, as with Nora towards the end of the last quotation. Creativity was a "chance to express your imagination" (Anonymous 23, QueA). Nevertheless, creativity was viewed as much more than personal expression. When the second and third focus groups considered 'personal expression' as a component of creativity, they gave it low priority:

> *Rory: "Personal Expression"?*
>
> *José: No.*
>
> *Toni: I don't think so.*
>
> *Inma: No because you could say I'm happy and it's not really creative, is it?*
>
> (FGA2)

While teachers also related creativity with liberty and freedom of expression, both adolescents and teachers viewed personal expression as a very basic and incomplete way to describe creativity.

### *4.2.3 Disciplinarity*

According to adolescents, creativity was not limited to the arts and literature (only one defined creativity in this way in the questionnaire). Toni expressed this common view:

> *I think a lot of people will think first 'oh that's going to be one of the arts'. But like you can use creativity when doing anything, when doing problem-solving, or just thinking about a solution to something in real life situations.* (Toni, FGA1)

Even more so than students, teachers frequently cited the arts to illustrate creativity and the subjects that it was promoted in. However, from one teacher's perspective, these perspectives were exaggerated, as she explained in the 1-to-1 interview with me:

> *I notice that in some of the group interviews..., some of my colleagues might really just access an understanding of creativity through the arts .... Some other people's definitions might feel a bit too restricted or limited for me. I definitely see creativity as a possibility in any discipline or subject area. I don't think it's limited to the art classes ....* (Yvona, IntT)

While all subjects could enable creativity, some encouraged it more. Marc made this general point:

> *Yea, I think you can be creative in any subject anyway so it doesn't necessarily have to be in art but maybe some subjects are more creative than others. I would say that.* (Marc, FGA1)

Many adolescents cited examples of their creativity in the curriculum from within the arts or from the English language and literature classes. In the questionnaire, examples also came from design, language acquisition, mathematics, personal project, physical and health education (including sports electives), sciences, and a school trip to Switzerland. In focus groups, examples of creativity tended to be more equally spread among subjects, although the emphasis on the arts remained.

Adolescents viewed creativity as having both a domain-general and a domain-specific nature, although these terms were not used. The domain-general aspect involved having a certain attitude or mindset, and this is discussed further in section 4.2.6.

Domain-specificity became evident during the creative process and in the final product:

> *If your uniqueness is more based towards for example, you're very good at art and that's what makes you, or something that can help make you, unique, then that's a very specific way of being creative. But if you're very good at maths and sciences, then you can be creative in a different way in that by finding new ways of solving problems or finding new ways to look at a problem. But that's also a creative mindset….* (Bela, FGA1)

There was also recognition that being creative in one discipline did not imply you were in another, although there existed the domain-general creativity aspect of mindset. Inma starts a conversation about this through reference to a creative artist who may not necessarily be as creative in other areas, although she stresses the domain-general creative mindset:

> *… if you say the stereotypical artist is creative, they may not be able to give a creative presentation. … I think generally if you're creative, you might have a different mindset which would maybe lead you to think 'I'm going to do this presentation differently, I'm going to paint this differently, I'm going to present this upside down point of view', whatever.* (Inma, FGA2)

Other participants agreed in the focus group and cited other examples. Later in section 4.3.1, the importance of domain-specific knowledge for fostering creativity is discussed.

In summary, the adolescents believed that creativity applied to all subjects and in everyday life while recognising that creativity also had domain-general and domain-specific elements. The domain-general aspects related more to attitude and mindset, while the domain-specific referred more to using subject-specific knowledge to think differently and make products. Although a creative mindset was applicable to all subjects, being creative in one domain did not imply you were equally so in another.

### *4.2.4 Remixing ideas*

The adolescents believed that creativity often built on the ideas and products of others. Some even believed this was indicative of all creativity:

> *Creativity is the ability to transform traditional or original ideas into alternate forms or interpretations.* (Anonymous 18, QueA)

In the following quotation, Bela asks the group if a phrase (unknown to the group, this was Egon's definition of creativity in the questionnaire) was one aspect of creativity and she later shares an insightful world example:

> *Bela: …"Making already existing ideas into new and unique versions"?*
>
> *Nora: I do agree.*
>
> *Cian: Yes.*
>
> *Nora: That's creativity.*
>
> *Bela: OK! Someone made pizza scissors so I guess that works. Who would have thought to make scissors for pizza!* [Laughs].
>
> (FGA3)

It was more common to view this development or remixing of existing ideas as but one way that creativity could emerge:

> *For me, being creative means having new ideas that other people have not had before, trying out new things to create something new or "remix" an other idea to change it and make it better.* (Toni, QueA)

Teachers also recognised that previous products often inspired creativity:

> *Creativity is the making of something new or the combining of existing ideas or things in different ways.* (Ulrik, QueT)

Remixing of ideas was thus seen as a common central component of creativity.

### *4.2.5 Follow-through*

Adolescents believed that creativity involved more than just having an idea, that it needed some development, although the extent of this development varied. In the following conversation, Egon and Nora suggested that creativity involved significant development and drive, even necessitating a finished product in some cases, while

Marc thought that the development of an idea was in itself sufficient to be called creative:

> *Egon: I think ... you can have great ideas but you still have to develop them. And sometimes it's also ... harder to do it if you're different because maybe like it's a different way of thinking and it's harder for people to believe you or agree with you. So you have to be very strong with and clear with people different to you.*
>
> *...*
>
> *Nora: ... For it to be creative, it's something, as Egon said, ... developed from an idea to come into real life. For example, if I'm doing a piece of art, a painting, I can't just say my idea. It has to come through development and at the end when you look at it, maybe you will say 'this is something developed from my idea' ...*
>
> *Marc: I think in order to be creative, you don't really need a result. You could develop an idea. You could think of something and that could be creative but you might not for example finish it, finish the product or something., but at the same time you're being creative because you thought of that idea. You had that idea.*
>
> (FGA1)

Thus, adolescents did not tend to perceive creativity emerging through sudden or 'eureka' moments, but rather different levels of creativity became evident through conscious efforts to continue building on ideas.

Teachers also emphasised the importance of follow-through and going through the creative process, although the product was important too:

> *Yvona: I think, for me, it's more about students learning how to take a little bit more responsibility for an inquiry on their own, a project on their own, and going through that process and choosing something that they are passionate about, interested in, they get the support of a supervisor, and they go through that. For me, it's not about the product, it's not about the presentation, it's about the creative process.*
>
> *Ulrik: Yea,. ... There's some desire to create a product that represents some thought and effort. I do think that both the product and process are important.*
>
> *...*
>
> *Temma: I think for the student, the product matters a lot. I do think so. And I think we often say that it's the process that matters. And we might believe that but then right*

*away when people run in to take the photographs and what they are so proud of, you know they focus on the flashy products.*

(FGT1)

### *4.2.6 Mindset*

As mentioned in section 4.2.3, adolescents associated being creative with having a certain attitude and mindset, and that this was domain-general. Teachers did not clearly bring this theme up although they acknowledged the importance of having a creative attitude.

Marc brings the essence of what the adolescents meant by mindset when he defined creativity in the questionnaire as "a state of mind in which you are able to develop unique, even abstract, ideas and concepts" (QueA). When I asked the first adolescent focus group what creativity was, Egon similarly suggested that it was "a mindset or an attitude that someone has to express different things in different ways" (FGA1). Rory also associated creativity with a personal characteristic, stating that it was having "an attitude of problem-solving" (FGA1). In the second adolescent focus group, they concluded that creativity was more a way of thinking that was in the subconscious, like an instinct, a feeling or a mindset:

*Inma: It's almost a mindset. I don't know.*

*…*

*Inma: But maybe if you're creative, you don't think. I'm not saying that in a negative way but if you are creative it's more of a feeling maybe.*

*José: Yea, it's more like an instinct.*

*Inma: Yea, exactly. Because let's say "I'm going to do this creatively', do you sit down and* [pause]*, no you don't break, so it kind of comes to mind.*

*Rory: Yea.*

*Toni: Yea.*

(FGA2)

Rory's final comments in the 1-to-1 interview confirmed his opinion that being creative was less about having certain skills and more about the natural way one tends to approach a problem or task:

*Rory: I think that creativity is ... something that comes naturally to your mind. Maybe when you see something, you think 'I can do it this way' or when you're doing something 'I can do it that way'. You don't really think 'I am being creative doing this'. You just do it but maybe after you could realise you've done it, something really creative or something good.*

*EO: And are some people more inclined to be creative?*

*Rory: Yes, some maybe people are more open-minded so they're more creative. These two things could be related to each other because a person who is really open-minded sees everything maybe in a different way. They can think about a thing, not just the way it looks like but looking at it from a different viewpoint and seeing it differently.*

(IntA)

Thus, Rory saw this mindset or state of mind as including open-mindedness, a trait frequently mentioned by other adolescents. Similarly, one student suggested that creativity involved "seeing the world in multiple and new perspectives" (Anonymous 17, QueA).

Adolescents believed you could develop this mindset, this development being nurtured, learned or encouraged:

*I am not sure "learn" is the right word but maybe "nurture". I guess you can sort of learn from others if you are encouraged. Some people are just naturally creative in the way that they think and do things.* (Inma, QueA)

*I believe that you can learn to be creative. I think creativity is more of a way of thinking than any thing else and people can learn to think about things differently if they try.* (Anonymous 29, QueA)

In summary, Adolescents held strong beliefs that creativity involved having an attitude or mindset that could become so ingrained that it was instinctual. This could be largely learned if you were motivated.

### *4.2.7 Summary*

While adolescents' views of creativity were diverse, the differences rarely reflected opposing viewpoints. Rather, differences tended to arise in the emphasis given to

discussing certain aspects of creativity (whether it was interesting or easy to communicate about or not) and on the degree that an aspect applied to the nature of creativity (whether it was very important or not). An example of the former is that some adolescents did not get involved in discussions about the domain-generality and the domain-specificity of creativity. An example of the latter is that some adolescents emphasised the reinterpretation of already existing ideas or the remixing of ideas as more central to creativity than others. While I could have made a special effort to have the adolescents develop a definition of creativity, I felt there were enough commonalities to assume that there was a broad level of agreement about the nature of creativity, which allowed a consistent interpretation of how they perceived creativity being fostered by teachers in the curriculum as I discuss later in section 4.3.

This broad understanding of creativity was conceptualised by adolescents through its properties of novelty, value, disciplinarity, remixing ideas, follow through, and mindset. These properties could vary in their dimensions as indicated in Table 4.3.

Table 4.3: *Properties and dimensions of the nature of creativity*

| ***Property*** | ***Dimension (how the property varied)*** |
|---|---|
| Novelty | Social ↔ Personal |
| Value | Impact ↔ No impact |
| | To many ↔ To creator |
| Disciplinarity | All subjects ↔ Arts subjects |
| | General & specific ↔ General creativity |
| | Transferable ↔ Non-transferable |
| Remixing ideas | Often ↔ Rarely |
| Follow through | Product ↔ Idea |
| Mindset | Open ↔ Closed |
| | Flexible ↔ Fixed |

For example, 'disciplinarity' was viewed as a property of the nature of creativity which varied in three dimensions. While creativity applied to all subjects and not just the arts, there was a variation to the degree that it did. Also, demonstrating creativity in a discipline ranged from shallow domain-general creativity to a combination of

domain-general and domain-specific creativity. Finally, in the third dimension, there was variation, albeit limited, in the degree that creativity was transferable across disciplines.

Having established adolescents' perceptions of the nature of creativity, I discuss perceptions of how teachers fostered creativity in the curriculum.

## 4.3 Perceptions of how creativity is fostered by teachers in the curriculum

Adolescents' perceptions seemed to fall into four main categories:

- Shaping disciplinary relevance
- Shaping empowerment
- Shaping personal and social relevance
- Shaping creative metacognition.

Teacher data which fell into these adolescent-generated categories are integrated into the discussion for comparison and added conceptual depth.

### *4.3.1 Shaping disciplinary relevance*

As described in section 4.2.2, the adolescents believed that creativity emerged from a domain-general attitude or mindset, and from domain-specific knowledge. They noted that being creative in one subject did not imply you were equally so in another. This section describes their perceptions, as well as those of teachers, with how their creativity was fostered through a deeper understanding of subject knowledge, and how creativity manifested itself in that subject.

#### *4.3.1.1 Guiding domain-specific creativity through task specifications*

The adolescents believed that clarifying each subject's disciplinary boundaries helped them be creative within that subject. While some of these boundaries or limits

were logistic rather than disciplinary such as deadlines, others such as specifications for the final product of a task were helpful in clarifying how to merge particular disciplinary conceptual understanding with creativity:

> *You could have a lot of good and creative ideas but then maybe with not a boundary like a deadline or a final product you have to make, maybe then you lose, you have a lot of creative ideas but you never go into depth with one or you just don't develop an idea as much as you should.* (Egon, FGA1)

Adolescents and teachers often used the phrase 'thinking out of the box' to describe creative processes, especially during the initial stages. They also used 'thinking in the box' to describe times when they were looking towards traditional disciplinary knowledge. Creativity, therefore, involved looking both inside and outside the box continuously:

> *…you don't always have to get good ideas by being outside the box, but … you can get very very good ideas just looking inside the box* (Nora, FGA3)

Later, Bela gave a convincing example of the need for disciplinary understanding when being creative in a music assignment:

> *Because for music, it's great to be creative but if you think too far outside the box… then it doesn't sound right. There are certain things that are in the box in a way, certain rules of music, certain things like thirds sound nice together, things like this. If you don't abide by certain rules, then it's not going to sound nice or it's not going to work out well, in a musical sense. Like you can't put a certain amount of notes too close together…* (FGA3)

Giving presentations was a popular forum provided by teachers (presentations are discussed in more detail in the next section 4.3.2) to enable student creativity. Adolescents struggled to be creative giving presentations when they didn't know the subject knowledge well, as José explains:

> *… if you understand what you're doing, then you're able to take a step further rather than to concentrate on what to put in it… you can spend more time on extending it and making something personal as you* [Inma] *said or creative.* (FGA2)

Both adolescents and teachers used 'thinking *too far* out of the box' or a similar phrase to describe times when creativity did not show disciplinary-relevant

knowledge. It was, therefore, important to adolescents that their teachers helped them understand creativity within the boundary of the discipline. Teachers agreed with this, and felt that it was important for them not to go so far out of the box that they were unprofessional:

> *I can think of a couple of people who needed to leave just because they took pride in that they were so outside of the box but they weren't doing their job. And the Director had to say, well we have a responsibility to our students and if you can't meet certain requirements, it's not good enough to be creative if you don't write your reports or if you don't give feedback or whatever.* (Temma, FGT2)

Adolescents seemed aware that it was essential to have a strong disciplinary background to demonstrate creativity, and so they appreciated when these were explicitly linked in task specifications.

#### *4.3.1.2 Guiding domain-specific creativity through advice, examples and modelling*

As well as through task specifications, it was also considered important that teachers provided guidance in the form of advice, examples and modelling discipline-specific traits.

As mentioned in section 4.2.6, adolescents stressed the importance of teachers encouraging a creative mindset over teaching specific creativity skills. One student expressed how motivated she was with one teacher's words:

> *In theatre class our teacher made a joke once and said something along the lines of "don't be afraid that you'll look silly because we all look silly, we won't judge you for being weird, we'll only judge you for not being weird". I found this totally motivating.* (Anonymous 21, QueA)

However, both domain-general and domain-specific *advice* for being creative were considered important when an assignment was being introduced. At other times, it was evident that more subject-specific technical advice or guidance was helpful, such as during this student's Personal Project:

> *My supervisor gave constructive feedback about the sketch of the product which helped me to be more creative in the next steps of the process.* (Duma, QueA)

During the creative process, adolescents often took advice more readily when there was praise attached. For example, Suda suggested that teachers encouraged her creativity "by complimenting what I already have and then putting their own input into it on what I should do next or even how I could improve on something" (QueA). In addition, if the feedback was given in a positive manner and challenged the students appropriately, it motivated adolescents to aim high and be creative:

> *Throughout my personal project my supervisor always told me to try something bigger and better and to go for the extra thing. If you aim high then you will be more motivated to reach your goals. I think that all the positive feedback has helped me to be more creative and to get new ideas.* (Anonymous 21, QueA)

Some adolescents pointed out that teachers' feedback encouraged creativity within the discipline when it was framed in an open-ended way so that the students could explain their creative ideas:

> *They usually always start by telling me that they like my ideas but then they challenge me to make them better. They ask me questions, for example what makes my idea unique and whether I believe that it would impress others. I always want to be the best so I immediately look for improvements.* (Anonymous 21, QueA)

The following illustrates how the visual arts teacher was seen to provide disciplinary-relevant feedback on creativity effectively, albeit perhaps applicable to other disciplines, to a group collaborating on an assignment:

> *When we gave these ideas about being… set in a jungle, our teacher asked us if being set in a jungle had a deeper meaning … She said maybe being in a jungle could show how life can become chaotic at times, or about how we are always evolving, and even about how a jungle has a certain type of cooperation between the animals themselves.* (Anonymous 7, QueA)

Thus, giving advice often overlapped with sharing *examples*. In referring to the dance component of physical and health education class, one student felt she could be more creative after her teacher "showed us dance moves and gave us ideas" (Anonymous 2, QueA). Examples helped make creativity more visible to students and

demonstrated different possible approaches, although Lara made clear that "sometimes we are given examples to follow, but we are not allowed to copy the exact form!" (QueA).

Teachers indicated that they often provided examples to illustrate what creativity could look like when students were beginning an assignment. Typical was to share a sample considered excellent (an exemplar), that was completed by a student or a group in previous years, although there was a fear that students would try to copy the general idea. Temma pointed this out in the first teacher focus group and Yvona suggested that what is important is showing various possibilities:

> *Temma: … I know that many people say showing exemplars is very good but I don't always like doing that because then I get fifteen projects that look exactly like the exemplar, and that's not what I want. And so you can say 'I can show you something, this is a possibility, but that's only a possibility'.*
>
> *Yvona: Yea, that makes me think when you're saying that what if we were able to show a range of possibilities, not just one exemplar, maybe at least three or more different ways.*
>
> (FGT1)

Examples could also be hypothetical or ranging in creative quality. Yvona elaborated on her comment later and added that in one task in Life skills class:

> *I gave examples of what it could look like or might look like, and examples of what it should not look like or become. And always starting with the purpose of why are we doing this task.* (FGT2)

One teacher looked towards examples from outside the school by providing "some examples of performances done by 'professionals'" (Anonymous 4. QueT).

Seeing samples which demonstrated a diversity of creative approaches, whether real or hypothetical, and whether done by students or professionals, seemed to help students develop both domain-specific and domain-general creativity.

The third way that teachers guided domain-specific creativity was through them modelling discipline-specific creativity traits and products (modelling domain-

specific traits was also seen to empower adolescents and is discussed in section 4.3.2). One student was encouraged to be creative in visual arts by seeing her teacher model it in a final product:

> *My art teacher usually does something her way, then gives us time to do it ourselves. This is really helpful when testing new concepts or styles that some of us might have not been familiar with.* (Suda, QueA)

Teachers also stressed the importance of modelling creativity in their everyday interactions with students. Yvona places the potential power of this in both broad and discipline-specific contexts:

> *… we spend most of the school day with them and so we become a model for them with how it's possible to be as an adult or as an experienced learner. They're watching us. They're seeing, we not only interact with them in their classes with them, how we interact with our colleagues in front of them or their parents. And I think when they see that it's possible to be creative in different disciplines or with different skill sets, I think they gain access to someone like that.* (Yvona, FGT2)

This section highlighted the importance adolescents attached to getting disciplinary-specific guidance from teachers. This guidance took the form of advice, giving examples, and teachers modelling domain-specific and domain-general creative behaviours.

#### *4.3.1.3 Application of assessment criteria for domain-specific creativity*

As we noted in section 2.7.1, the IB publishes four assessment criteria in each subject group, which teachers apply for scoring students. Adolescents believed that the MYP assessment criteria in all subject groups could potentially reward creativity, even when it wasn't stated explicitly in the descriptors, but that not all teachers did so:

> *Some do and some don't. I think there's always a way of fitting creativity into something. Like when you think about maths, I think Criterion C is communicating, you could write things down in a slightly different way that is creative…* (Inma, FGA1)

The arts subject group, along with English language and literature classes were widely seen to stand out among the subjects to encourage and reward creativity.

Nevertheless, there were indications that other subjects, including science and mathematics, were encouraging it more compared to previous years:

> *Often in creative subjects such as art, music, and other things of the sort there is a lot of emphasis on creativity and it is often rewarded. I feel as though more subjects are starting to support creativity. For example, in maths a few years ago everything was assessed on you knowledge and the tests your were given in class, however this year in particular … part of our criterion C grade was … based on a creative teaching presentation/style …* (Bela, ODFA)

In her response in this discussion forum, Nora agreed and gave an example of science in which they had to present data in an alternative way "which encouraged students to do things such as presentations, voice recordings" (Nora, ODFA). Nevertheless, there was still a feeling among adolescents, including Bela and Nora, that not all teachers promoted creativity in assessment tasks.

Teachers tended to be more critical of the assessment criteria with a general feeling that while "there's nothing in the MYP criteria that precludes creativity" (Temma, FGT1), the vague wording of these allowed teachers to apply creativity to varying degrees. This led Yvona to conclude in the same focus group that "I wouldn't say creativity is at the forefront of these criteria we are using for assessments" (FGT1).

Teachers believed that if creativity was being applied to the criteria, then this ought to focus on deepening or showing disciplinary knowledge. In a focus group, Stela suggested that some students can be 'too creative', later clarifying this to mean that they were creative outside the boundaries of the discipline by, for example, being artistic in science. Temma agreed and added that some teachers, more in the past, mistakenly gave too much credit to elements such as cover sheets, borders, and correct spelling, and consequently "were leading the students on a very different path and you'd have to say there isn't anything going on here" (FGT2).

#### *4.3.1.4 Interdisciplinary learning for creativity*

While interdisciplinary learning was not a common discussion point among adolescents, it was seen by some to encourage creativity.

One student noted that she felt very creative when doing an interdisciplinary assignment involving physical education and English literature (I have replaced the real name of the school with CEIS):

> *Another time I felt creative at* [CEIS] *was in sport class, because we had to put together a movement composition. The composition needed to consist of several gymnastics moves and a certain amount. The composition also needed to show a story from a Shakespeare play and we needed to use the equipment we had. I felt very creative while doing this, because we had to combine all these elements together and do it under a time limit.* (Anonymous 14, QueA)

After attending a M4 exhibition recently on an interdisciplinary unit, Bela (M5) was very impressed with the creativity on show. Indeed, the delight she expressed in seeing creativity in others was powerful, and offered an inspiring and colourful justification for interdisciplinary learning and its sharing:

> *… I think they were researching things that could help the world … and they were talking about mechanical bees for pollination or things like this. They had to have a mathematical aspect to it and they had to have a scientific aspect to it and they had to have …a Humanities aspect, and they had to do it all creatively. They had to create an interesting presentation, they had to come up with an idea, they had to do research into a scientific area to actually understand the topic… they had to do it all creatively in subjects that are not usually very creative.* (Bela, IntA)

Some teachers noted the opportunities for student creativity within interdisciplinary units, such as "linking basketball dribbling with music" (Anonymous 8, QueT), and in the student newspaper elective which Temma described as interdisciplinary.

#### *4.3.1.5 Summary*

Shaping disciplinary relevance was considered an important factor in encouraging creativity in the curriculum. It was believed that student creativity was enabled if it was promoted and assessed within the boundaries of disciplinary knowledge. Students observed that teachers across subject groups and within them encouraged and assessed for creativity to varying degrees, although a greater commitment to do this was evident in recent years. Although not mentioned by participants, this

observed shift may have been due to recent changes in the MYP model since 2014. On a similar but distinct point, students believed that ensuring that they paid attention to disciplinary knowledge ('thinking in the box') helped them be creative ('thinking out of the box'). Finally, interdisciplinary units and electives were noted for how they encouraged creativity, although this was not discussed in the focus groups.

### *4.3.2 Shaping empowerment*

In section 4.3.1, I highlighted that adolescents and teachers believed it was important to shape creative learning and tasks within the boundaries of the subject. Boundaries were also seen to play an important role in how young people felt empowered in the curriculum.

#### *4.3.2.1 Classroom social environment*

A social environment in which the teacher enforced strict rules, and which did not provide students with a sense of space, were commonly seen to limit creativity. Bela was indicative of many adolescents' beliefs when she urged teachers to "give us room to breathe". Adolescents also believed that too much freedom in which a teacher enforced few or no rules also inhibited creativity, and ideally "they give us space and rules but no strict rules or restrictions" (Anonymous 2, QueA).

Adolescents often linked this creativity-inducing classroom environment with teachers' traits such as "laid back, but also not too much" (Anonymous 5, QueA). Other words commonly used by adolescents to describe the balanced traits of teachers that encouraged creativity, were being open-minded, friendly, caring, easy-going, committed, positive, funny, creative and flexible:

> *The teachers who encourage me the most to be creative first of all are creative themselves, they are funny and cheerful, they are kind and helpful, they are all really motivated and they like working with students. I think the most important thing is that those teachers clearly enjoy their jobs, they are always positive.* (Anonymous 21, QueA)

The same participant went into further depth with how warm teacher-student relationship promoted creativity.

> *I like it when teachers get to know the students well and show interest in them as well. When they tell personal stories students learn to see teachers more as humans than as just a teacher. When students like a teacher they work better together and they are able to be more creative and help each other.* (Anonymous 21, QueA)

In summary, adolescents believed that the social environment and its underlying social structures significantly influenced their creativity and that teachers played a central role in developing and maintaining these in the classroom. Teachers had similar opinions with one noting that uncreative learning environments arise when "there are too many rules, students are not trusted with time, punished for being different" (Anonymous 1).

#### *4.3.2.2 Classroom physical environment*

There were also ways that the physical classroom environment was seen to empower adolescents and encourage creativity. Seating arrangements which encouraged social interactions were frequently seen as favourable for creativity. Most classes had tables grouped together to accommodate up to four students, and these seating arrangements were usually flexible, meaning students could decide among themselves where they sat. While students tended to be with friends, teachers occasionally allocated students to table groups, and a balance of both was seen to be helpful for promoting creativity:

> *There are many classes that do not have an assigned seating placement, but then there are some where groups are assigned. Being in groups with people we may not always be used to sitting with, can leave room for us to hear their ideas and even help each other with work.* (Anonymous 7, QueA)

Adolescents mentioned varied elements of a classroom which encouraged creativity such as use of colour, posters, inspirational quotes, and plants, as well as having an overall warm and welcoming look.

> *I think it's more in terms of the warmth of the classroom. Because some classrooms have just white walls, smart board and a teacher. And that, for me, is very demotivating and for me, it's demoralising and I prefer when teachers have students do creative tasks with posters and hanging them across the classroom, and that really sets a good vibe for me and that encourages me to learn and think creatively as well.* (José, IntA)

While many adolescents seemed to assume this was the full responsibility of the teacher, some felt more inclined to be creative when they had some control over the design. José explained how something as apparently trivial as choosing where to put your poster was empowering and motivational:

> *…last year, we did posters in Spanish and we hung them up. That was quite exciting for me because we could do it wherever we wanted in the class. But in English we had posters and we had to hand them in to the teacher and the next class, she said 'OK, I've laid them out' and they were all across the room, it was not bad, but we were kind of 'oh, I don't really want my poster there, I kind of want it next to the door'. You know, it may sound stupid. So I guess more freedom with what we do with them would be better.* (José, IntA)

Yvona, a teacher, spoke without prompt of having her students involved in classroom design. She also mentions many of the creativity-encouraging elements mentioned earlier:

> *I've always really enjoyed setting up the classroom with students so that it was organised and creative and a fun place to learn… For me, it's important to have plants in the room. Big ones because then it's like a bridge to nature or outside. It's not just a room. I like to break up the room so there's a different flow. It's not the chairs all together. I like to have posters, … I have inspirational quotes in the room. … It should invite students to think and learn and be a welcoming place.* (IntT)

Adolescents believed there were limits to such elements as well, even with using resources such as computers:

> *When a classroom is really cold or really warm I can't work well. When the walls are too empty I get bored and it feels strange, but when the walls are too full with posters and words I get a headache. Computer labs!!! I don't like it because the students don't really talk with each other anymore but they are busy with the big computers* (Anonymous 21, QueA).

Having "easy access to any equipment that is needed to use" (Lara, QueA) and having "a wide range of resources to create our own way of presenting something" (Anonymous 6, QueA) were seen to empower adolescents and encourage creativity. Yvona, a teacher, agreed wholeheartedly with this view, and gave a colourful description indicative of many adolescents' views:

> *Basically, I like my room to be … organised and to have … different areas in the room where students have options, flexibility but also they have different ways of accomplishing the same task. They have choices. They've got different parts of the room that inspire thinking in different ways. And they have access to learning supplies and materials and different spaces of working with people or not. That to me, if a room is set up like that, that is going to inspire creativity because they see that they are many different possibilities and the room should not limit that. I feel like that if a room just has access to one type of thinking, if it has one modality, that can be quite limiting. Especially if they don't have some visual aids that inspire creative thinking related to their unit or resources available or things that maybe help them think about the outside world because we're learning inside predominantly and not outside. So for me, yea, it's important to set up a classroom that's organised, safe, inspiring and has everything they need to be creative, to think and learn.* (Yvona, IntT)

In summary, varied seating arrangements, accessible and varied resources, flexible spaces, and a welcoming classroom all were seen to empower adolescents and to encourage creativity.

#### *4.3.2.3 Having choices in activities*

Promoting student autonomy was frequently associated with open-ended activities which consequently gave students freedom to make choices and control of how they demonstrated their knowledge:

> *When my English teacher tells us to do an activity, assignment or even an essay, she always allows us to decide how to do it and we have the freedom to choose most of the things that involve the task. I think that by taking control of the situation, we can know our possibilities and limitations and we can all do something in a unique way.* (Anonymous 15, QueA)

There was agreement that open-ended tasks did not mean total freedom and to maximise creativity some constraints or boundaries were needed. When asked when in school they feel most creative, Marc stresses this aspect:

> *When you get to design the task yourself. When you design what you want to do yourself. It's not like we aren't given a template or something but we have to develop our own ideas, and our own way of how we want to learn.* (Marc, FGA1)

Later, Marc elaborates further in this conversation in which everyone is agreeing that restrictions or boundaries such as task goals, product specifications, disciplinary concepts, and timelines are necessary for fostering creativity because they help the adolescents to explore in depth a manageable number of possibilities:

> *Marc: I think it is kind of important to have boundaries, or maybe not boundaries, but maybe an end goal because that can kind of inspire you to think of an idea or inspire you to think of something that would reach that goal.*
>
> *Nora: Yea. I agree that having boundaries may not be the only thing you need but it's good to have it because it kind of sets you, as Marc says, where you want to go but also like to make sure you focus on that point so you don't get another idea and completely forget about the previous idea you had.*
>
> (FGA1)

Location was an obvious boundary in that adolescents usually operated and shared their creativity within the confines of the classroom. However, this wasn't always the case. Toni discussed one assignment in English in which they were instructed to create a short Shakespearean–type play anywhere in the school:

> *We were allowed to move wherever we wanted, and create our set like we wanted. For example, my group did it in the staircase and then we used the different …and hung up posters. I know another group did it in the hallway. But then also, some groups moved around the classroom and rearranged all the tables ….* (Toni, IntA)

Later Inma and Toni agreed that those that did it in the classroom were less creative. Perhaps because it was uncommon for adolescents to have schoolwide freedom of movement to decide where to be creative, this type of choice was not commonly discussed by the participants.

Teachers seemed to view student empowerment for creativity in similar terms. Ulrik, for example, suggested that “it's not necessarily something totally open to be creative.” (FGT1). Similarly, Temma believed that the teacher “who really sets the limits might be the saviour for the kid who is all over the place, and needs a little bit of harnessing so that those wonderful ideas aren't just going all over the place”, to which Yvona replied that “it's possible though to still keep structure but have freedom to be really creative” (FGT2).

While adolescents believed creativity was fostered in tasks when they had “the opportunity to do it alone or in a group” (Anonymous 4, QueT), they also realised that it was important that “teachers make sure that we get a good mixture of peer work and individual work", this creates a good balance between exchanging ideas and developing your own” (Anonymous 1, QueA).

Teachers agreed that students needed opportunities to share ideas in a group and to be independent in class, and that an appropriate balance should be evident in the curriculum. In addition, it was also important that students had opportunities to be creative individually and in groups:

> *… hopefully when a school designs and plans its curriculum, they make sure that there are a nice balance of opportunities for individual creativity…as well as …doing something more collaborative creatively.* (Yvona, FGT1)

What the appropriate balance was between being independent and being in a group remained uncertain. Here, Ulrik suggested that the balance was perhaps tipping too far on the group:

> *When we were at school, things were much more on an individual basis, much more than here. Here there is quite an emphasis on working together and collaboration. I think there are good arguments that maybe it's gone too far that direction. Certainly, for an introverted child like me, it would have been stressful to work with others every day. There needs to be a balance for that reason as well for some of the different personality types, and maybe challenging some of the people who work alone but also those … who are always in groups.* (Ulrik, FGT1)

Later, Temma returns to Ulrik's comments and suggests giving students choices to be alone or with others, and that having sufficient resources available may make it easier for creative action:

> *I guess first of all there would be a certain element of choice but I would agree with Ulrik that there are parameters and there's a bottom line to what needs to happen, 'do you want to work with a partner', 'do you want to work alone', 'are there ways that it can be accommodated' and sometimes it just has to be a certain way but sometimes there are a lot of other possibilities in having certain materials available, having extras around, I think let people know that it isn't just one idea that is allowed….* (Temma, FGT1)

In the previous section 4.3.2.2, some adolescents similarly pointed out that to encourage creativity, it was important to empower them with easy access to a diversity of relevant resources.

In this section, it was noted that adolescents believed creativity was fostered in an empowering environment in which activities and tasks were sufficiently, but not excessively, open-ended in terms of the creative process, the creative product, the location for sharing this product, whether it was done independently or in a small group, and in terms of a variety of resources.

#### *4.3.2.4 Presenting creative products*

Adolescents felt empowered when they had opportunities to present and share their creative products, done typically through posters and oral presentations:

> *I think you're going to be happy about your poster or what you've done and you're going to be excited about presenting it to the class and express yourself if you've done a good job and if the teacher motivates you… You know, creativity, being creative, and expressing yourself is fun in a way, and I think that has a positive impact.* (José, IntA)

However, presenting did not guarantee creative delivery or products. Many adolescents believed that PowerPoint presentations were frequently uncreative, boring and showed shallow understanding. It was often unexpected extra freedom or an unanticipated boundary in presentations that set powerful conditions for

empowerment and creativity. Examples noted by students included the teacher giving the students freedom to give their presentation anywhere in the school premises, the teacher expecting the student to step into the role of a character from a novel sometime during the presentation, or the teacher not allowing them to use a PowerPoint format:

> *Inma: ... we recently had a presentation where we were told to do things in whatever way we want.*
>
> *Toni: But we were restricted. We weren't allowed to use a PowerPoint presentation or we weren't allowed to use any electronic visuals.*
>
> *José: But I don't think that was about prevention. That was more encouragement of creativity because usually when you have a presentation, the first thing that comes to your mind is a PowerPoint presentation and you like go from slide to slide speaking to the class but I think in this one they forbid it so that we can be more creative and that we could use like posters, speech, acting out and stuff like that.*
>
> *Toni: That also made it more interactive.*
>
> (FGA2)

Teachers acknowledged that PowerPoint presentations were often used as default by students to demonstrate their understanding and that they often lacked creativity. Yvona acknowledged that teachers needed to find ways to avoid this:

> *I do feel like a lot of students I work with right now are defaulting to a PowerPoint presentation for to show their learning especially in the interdisciplinary unit that we do. The task is open. It's like SasA* [service as action]*, we encouraged different ways but they really just like doing presentations that have a PowerPoint with it and not really knowing how and I guess maybe we're not structuring enough or scaffolding enough for them to try to have a space to present in a different way what they've learned.* (Yvona, FGT2)

This section highlighted how adolescents felt empowered giving presentations and sharing products, and when teachers gave unexpected freedom or restrictions for these, creativity was often encouraged.

#### *4.3.2.5 Having and managing time*

While there were necessary restrictions such as deadlines, the adolescents believed that teachers may "not give enough time for assignments to be creative" (Anonymous 2, QueA). Conversely, Ashe mentioned that "all teachers of classes that I thought we are using creativity gave me time to use creativity in the classes." (Ashe, QueA).

It was common for adolescents to mention the extended time they had to complete a project which culminated in a product they were proud of, although the specific time-period was rarely provided. One exception came from an adolescent who, nonchalantly, gave an enticing description of his video:

> *Last year, I spent roughly 1-2 months creating a Claymation video. A claymation video is when you create a stop-motion video using clay figures as characters and props (like in Shaun the Sheep). My claymation video was about an anthropomorphic Frog and Bird having a picnic together, until a Lizard enters the party and tries to ruin all the fun.* (Anonymous 6, QueA)

Very often in open-ended creative assignments, adolescents not only felt they had significant time but that they had considerable autonomy with how they used this time.

#### *4.3.2.6 Teacher and student questioning*

As well as open-ended activities, open-ended conversations and questions were also seen by adolescents to empower them and encourage their creativity, with Nora urging teachers to "make sure that everything including arguments, questions and conversations are kept open-minded so we can use our creativity to answer the question or make a statement that works for us" (Nora, QueA).

However, for students with limited English proficiency, being asked a question was often a traumatic experience. This was particularly noted by one student who felt "bad and unlucky" (Ashe, IntA) when the teacher asked him a question in front of the class. Sometimes he did not understand the question and sometimes he did not know the answer. In a 1-to-1 interview, he made clear the anxiety he felt about being wrong,

and the resulting awkward silence that usually followed left no avenue for his creative thought:

> *Ashe: … I'm worried about my English skills. I'm here only one year so my English is not that good and listening. So I'm worried if I say something wrong, I worried about it.*
>
> *EO: And you're worried about what, that what would happen?*
>
> *Ashe: About saying something wrong like make the class stuck. For example, a teacher asked me something but I don't have my ideas or I don't understand. I have to think about it for like a few seconds in the class. It becomes so quiet and I hate that atmosphere.*
>
> *…*
>
> *Ashe: … if I say 'I don't know', I cannot be creative.*
>
> (IntA)

Clearly, Ashe sometimes felt cognitively unsafe and consequently uncreative.

Teachers also appreciated the importance of open-ended questioning in fostering creativity, as Ulrik pointed out:

> *I think that open-ended questions can help to foster creativity. For example, "What other viewpoints about this issue are there?"* (Ulrik, QueT)

#### *4.3.2.7 Being consulted*

Adolescents believed that creativity was encouraged when teachers consulted them about a task. When asked what characterises teachers who foster creativity, one replied that:

> *They always ask us questions after they've discussed a task they want us to do. They find it really important to also ask our opinions.* (Anonymous 7, QueA)

Those adolescents who continued to participate in the research after the questionnaire felt the experience of being consulted developed their understanding about creativity and of opportunities when they could be creative. Some were also

comforted by noticing their peers had somewhat similar views to them about creativity:

> *I saw that people around me had quite different opinions maybe but not that different. The main aspects of what creativity is and what's the basic concept, I saw that they almost all thought the same as I thought. But then maybe they had slightly different positions on other points but generally we had the same points of view.* (Rory, IntA)

The benefits of hearing the perspectives of others was often considered transformational. For example, Bela, who frequently voiced strong opinions, sometimes reconsidered her positions based on what she heard.

> *You know in a certain way it's just hearing other people's opinions on a topic as broad as creativity has really opened up my own views a little bit because sometimes you can put some things in a box and then just leave it there but then hearing other people's opinions kind of turned on the walls of the box and opened it up again to new thoughts.* (Bela, IntA)

Bela greatly appreciated being consulted upon in this research, and felt that opportunities to influence decision-making were rare in the school. She found being consulted upon at school sometimes had a disempowering effect instead because either students didn't know why they were being consulted or their feedback was not seriously considered. This excerpt from the 1-to-1 interview is an emotive appeal for more authentic student consultation:

> *I really appreciate what you are doing because it's not often that people actually ask the students or ask us how do you think about this, what do you feel about this. It's often the teachers going 'well there's this this this, and this is not working' in some meeting somewhere off in a corner going 'this this this is not working and these are the changes we're going to make and the students are just going to have to deal with it'. We're never asked things like this or when we are asked, then our thoughts are not really taken into consideration. And if they are, they're often implemented in such a way that upsets students.* (Bela, IntA)

A consistent message was that being part of the research helped students feel empowered. As discussed in section 4.3.4.1, consulting them also seemed to develop their creative metacognition.

#### *4.3.2.8 Summary*

Adolescents made repeated and strong links between feelings of empowerment and creativity. These were fostered when they had choices with the process and product of a summative task, having ownership of their learning and products, being consulted upon, and having a high level of autonomy in their interactions with people, time and the environment. Boundaries included classroom rules and expectations, deadlines, and with having a certain limit to the choices available in the creative process and product.

### *4.3.3 Shaping personal and social relevance*

Adolescents were motivated to be creative when they felt that classroom activities and assignments had relevance. While this is perhaps predictable, they linked this with feelings of accomplishment when they were creative. These feelings of accomplishment were enhanced when they received recognition from teachers and their peers.

#### *4.3.3.1 Personal meaning and accomplishment*

Many adolescents, like Lara, viewed creativity as "something personal" (FGA1) and so they were motivated to be creative in tasks that gave them opportunities to find personal meaning:

> *I did my personal project based on art and creativity. The main concept was to recreate a piece of artwork from an artist I really like and took his style to create something of my own using his techniques and styles.* (Suda, QueA)

Similarly, when being creative, adolescents felt motivated to gain a sense of personal accomplishment, and they realised this was achieved "if you've worked hard at it" (Inma, IntA) and "seeing it from start to finish" (Toni, IntA). When achieved, these feelings of personal accomplishment gave what many described as a feeling of pride:

> *I also felt creative when I made my very own song in music. I used garage band to compose a unique song. It sounded really cool and I'm guessing nobody else had made that song before. I was proud of my work and felt creative.* (Anonymous 9, QueA)

As the previous quotation reveals, there were often social dimensions to feeling personally or intrinsically motivated, and this is explored further in sections 4.3.3.2 (peer pressure) and 4.3.3.3 (social recognition).

Teachers recognised personal relevance was becoming particularly relevant during adolescence:

> *When they're in adolescence, if it relates to their lives and they can make a real life connection to it, and it's something interesting to them, I think they're willing. If it has no relevance for their personal life then I think the older a student gets, maybe the less willing they are to be creative ...* (Yvona, IntT)

#### *4.3.3.2 Peer pressure*

One social dimension which contributed to adolescents' perception of the relevance of a task was the peer pressure associated with it, and a widespread feeling was that "if you are around creative people then they will be able to influence you and will help you to become creative too" (Anonymous 21, QueA). Seeing or hearing what peers were doing and were accomplishing in a task motivated adolescents to be creative, as José described here while seeing peer pressure as a good thing:

> *EO: Do you think there is peer pressure, from other students, to be creative?*
>
> *José: Yea. Yea. But I think peer pressure isn't always a bad thing especially when it comes to creativity because what they do is push you. For me it's motivation. But they push me like 'oh, he's doing this, I better think of something quickly', and you push yourself to become a better version of what you are, not necessarily of what they are but you're pushing yourself to be a better you and to be more creative, better thinker, you know, things like that.*
>
> (IntA)

Later, José adds that he feels motivated to be more creative, when he hears his peers say "'Wow, I've never seen that', 'they're going to get a good grade', 'Wow'" (IntA).

Thus, it seemed important to adolescents that there were opportunities for them to listen to and engage with their peers about creativity in tasks.

Creativity in the curriculum was thus held in high esteem by adolescents. They saw creativity as positive and as something special. Colour was used by some students to describe these attributes of creativity:

> *...imagine if the whole human population was grey, or maybe even transparent. And imagine if we lived in a world of such characteristics. Creativity is what would bring colours to our lives, and therefore, it would bring colour to ourselves.* (Anonymous 15, QueA).

When I asked the adolescents directly if creativity was seen in good light by their peers, there was an overwhelming perception that it was. Typical responses were "I'd say 99% of things that are viewed as creative are positive. Because it's always like an extra" (Inma, IntA) and "If you do something new that nobody has done, people will appreciate it probably" (Rory, IntA).

It was unclear if creativity was held in high esteem because of how teachers fostered such attitudes or for other reasons. Teachers recognised that creativity was thought of highly and there existed peer pressure to be creative. Peer pressure and feedback were closely related, and knowing your creative strengths and limitations from peers is discussed in section 4.3.4.2.

Teachers encouraged peer to peer sharing of creative products, although, on occasions, it was appropriate not to do so or to share them only with the teacher:

> *Yvona: Another thing I think about in terms of creativity in schools is that when students are creating something, or producing or expressing, it also for me means there is some sharing going on and that they get to see what other students create and I think in that sharing of diversity, that sort of opens up an understanding that everyone has their own perspective which is valid and true for them.*
>
> *Temma: I think that's true but I think there's also a respect for privacy as well and if you're in a creative writing class, there are times when things are only for yourself or maybe you are only sharing it with your teacher, and that's also a part of it too that it doesn't have to always be for everyone. Sometimes it can only be for yourself.*
>
> [Ulrik and Yvona agree] (FGT1)

Peer pressure was thus seen in a positive light in how it encouraged a culture of creativity.

#### *4.3.3.3 Social recognition*

Adolescents felt motivated to be creative when they knew their efforts could be rewarded in some fashion. Many were reticent with stating that they were motivated to be creative by rewards. For example, Bela, when sharing her Personal Project at a community event involving students, teachers and parents, was proud with how it went for her:

> *It made me feel quite good because I got some recognition for the work I did though I didn't really need it. I felt pretty accomplished with what I had actually made.* (Bela, IntA)

Not all adolescents were reticent with saying that they sought social recognition when being creative. Aiming for a high academic grade was motivating and so "by giving points for creativity, creativity can be developed" (Suda, QueA). Marc was motivated by the prospect of praise as well:

> *I believe that teachers and students do encourage me to be creative because they could give me positive feedback or extra points in assessments for creativity.* (Marc, FGA1)

In the following conversation, I ask Inma and Toni what motivates them to be creative, and Inma was also direct with suggesting the prospect of different forms of reward such as a pleasing social impact (for example, seeing someone else feeling happy), a good school grade, or being recognised as the type of person you want to be (for example, a caring person):

> *EO: … What is it that pushes you to be creative?*
>
> *Inma: If you're encouraged or … if you know you're going to be rewarded for it.*
>
> *EO: So if you felt there was a reward there for you?*
>
> *Inma: Yea.*
>
> *EO: What would that reward look like?*

*Inma: It could be anything. Say if you were making a card for someone, and think you could either make it boring or you could put more effort into it and make it more creative, and you think 'oh, well, then they'll be happier with it in the end by making an effort'. That it could be a reward or it could be like in English, where if you're creative you're going to get a better mark. It could also be a more substantial thing. I think anything could be a reward.*

*Toni: It's that feeling of happiness because if you create, and I'll use this example again with the card, if you know that the person is going to be happy about it, it really shows that you care.*

(IntA)

It seemed that tasks which involved making products which were later shared had potential to encourage creativity. The connection between personal satisfaction or pride, and with getting social recognition were closely entwined in students' commentaries, as they were with teachers':

*...there is that satisfaction when you have completed it. ... I guess it's that idea of being noticed, being remembered is all part of it. Maybe you don't have to be creative for that feeling but I do think it comes out of the creativity quite a bit.* (Temma, FGT1)

Nevertheless, while perhaps not seeking it, adolescents appreciated it when they received social recognition. From her peers, Nora clearly felt a sense of pride of her creative accomplishment when she wrote that "my friend was very impressed and said things such as ''I would never think of something like that'' or ''that's so awesome''" (QueA). It was evident that adolescents sought or appreciated recognition from adults as well, including teachers. Teacher praise was seen to encourage creativity, whether it was after the product was completed or during the creative process. As we noted in section 4.3.1.2, adolescents were more inclined to be motivated to deepen their disciplinary knowledge and creativity when teachers used both praise and advice in their feedback.

#### *4.3.3.4 Summary*

To maximise their creativity, adolescents needed to feel personally connected with assignments, as well as have forums to interact with their peers and teacher. These

interactions not only helped shape the relevance of their learning but also provided opportunities for adolescents to share their ideas either during or after the creative process. Feedback, including praise, arising from these interactions often made learning more relevant or gave them a feeling of accomplishment.

It will be seen in the next section on creative metacognition that adolescents' peers and their teachers played an important role not only with motivating creativity but also with helping students understand the nature of creativity and to assess the creative quality of their progress.

### 4.3.4 Shaping creative metacognition.

In chapter 2, section 2.7.2, creative metacognition was described as "a combination of self- and contextual knowledge used to make decisions about one's own creative efforts and accomplishments" (Kaufman et al, 2016). This section describes adolescents' perceptions of how developing creative metacognition fostered creativity, and what teachers did to help develop this.

#### *4.3.4.1 Exploring the nature of creativity*

Undoubtedly, teachers, students and family played significant roles in shaping perceptions of what creativity is, and what it involved. In section 4.3.2.7, I reported that adolescents felt empowered by being consulted. It was also evident that it heightened their awareness of it in daily actions and helped them develop a deeper understanding of their creativity. I will discuss this aspect of self-knowledge about creativity and how it was used by students to influence their creative efforts and achievements.

Being consulted upon and developing self-knowledge of creativity heightened adolescents' sensitivities to when and how to be creative, as José illustrated:

> *José: I have heard some different points of views other than mine and I think that now that I have heard these opinions, I think this has, I don't know, benefited me in a way, I*

*guess. I'm quite open-minded so I accept others' opinions and I consider them and everything so I think this has benefited me, yea.*

*EO: And do you think it has helped you be a creative or a more creative person?*

*José: I definitely have thought about that and yes, it has actually because I've definitely thought about it in the work I'm giving in through my courses, through the tasks that I'm given. … I now think about kind of the freedom I'm given with what I'm meant to do in the task and everything. I think I take advantage of the fact that some teachers don't really give many constraints so I can maybe explore different ways of doing different things.*

(IntA)

Like José, Rory felt more sure that he was more creative because of his participation in the study because now "I almost always also think about the interviews I did and about what we said was creative" and gave an example from his design class:

*When we had to do a Design project this year and the final product was a video about technology and while I was doing it I thought about creativity so I tried to use a lot of different camera shots so when you see the video, there's always different camera shots from everywhere so I thought about that.* (Rory, IntA)

While teachers did not comment on how the student participants were impacted through the study, they described how it had affected them. Teachers responded in similar ways in that creativity seemed to play a greater presence in their lives. Yvona thought that "just listening to other people's thoughts about creativity has definitely helped me to understand my own a little bit better… it has definitely influenced me" and she continued to highlight the benefits of being involved in the study even more emphatically:

*… and I've seen the impact with student activities because I definitely see the link between student enjoyment of learning and creativity. I feel like I've had a couple of pearls of creativity in the last week and I'm always thinking 'oh, this connects with the research that Eanna is doing'. So, I have noticed an impact in my own teaching practice with students.* (IntT)

Similarly, Ulrik said it "made me think more about creativity. It certainly opened me up to different views, like my friend Temma and others who've participated. I

suppose also I'm a bit more conscious about creativity" (IntT). Upon reflection, Stela felt that "I think it has made me more aware of me and looking at trying different ideas and not necessarily rehashing what you've done before so actually thinking about what I'm doing more" (IntT). Temma, on the other hand, was not entirely convinced that participating had such an impact, although she noted "I found myself talking to some people, especially when I have disagreed with people and I have asked others 'would you see it that way?'" (IntT).

#### *4.3.4.2 What one's creative strengths and limitations are*

Adolescents rarely brought up self-assessment of their creativity, whether it was during the creative process or at the end of it. They sometimes referred to occasions when they realised their initial ideas had low creative potential or their products were not as creative as they had hoped. However, there was no discussion of how they developed ways to self-assess accurately. Nevertheless, they referred often to proactively seeking and using feedback from teachers and peers to assess their initial ideas and final products.

In section 4.3.3.2, it was noted how adolescents spontaneously and encouragingly gave peer to peer feedback in the form of praise. Peers could also offer critique, as newly arrived Rory noted at the school:

> *... take for example Design because it's easy to explain. We had to do a video, you're being really creative, you design your own video, doing everything by yourself, but maybe the result is really bad. They will see your effort to do that but they will not say 'oh yea, you did a good job' but they will see that maybe the result is bad. So they will tell you that.*
>
> *EO: Who, your peers?*
>
> *Rory: Yea, maybe the peers will say that 'Yea, I see you put in a lot of effort but maybe the result could be a little bit better you know'. It depends on the work you do. If it's something real nice, they say 'wow, you had a great idea and that's really creative, you've done a great job'. And they will tell you that.*
>
> (IntA)

Feedback from peers was apparently seen as honest and, when critical, gently put. With seeking and taking on board feedback, there was perhaps an assumption among adolescents that this would help them self-evaluate their creativities more accurately, although this was never explicitly stated. Of relevance is the point raised by teachers that it was important for students to understanding creativity if they were to give feedback. Otherwise, peer feedback could misleadingly make some adolescents feel uncreative and "if they don't feel successful at it, they could have this fixed idea of 'oh, I'm not creative', and then give up and never try" (Yvona, IntT).

When teachers gave them choices with either acting independently or in a group during the creative process (see section 4.3.2.3 for a background to how adolescents felt empowered by this), the students had to strike a balance and know which option was better at any one time in the classroom. Adolescents sometimes took the initiative and sought the perspectives of others situated elsewhere when they were assessing their ideas or struggling to be creative:

> *I know when I'm stuck on an idea or stuck for ideas, I'll go to my friends and I'll pitch my idea to them and they can bounce my idea back at me with a different perspective. And so this gives me the opportunity to change my idea or to find other influences for my idea.* (Bela, FGA1)

Teachers highlighted the importance of self-evaluation and reflection in developing creativity, an important aspect of the MYP, "when a student can stand back and reflect on how the process went for them and what they would do differently again if they had to do that same process" (Yvona, FGT1). Ulrik suggested it may be difficult for any person, including an adolescent, to unravel the creative process at a conscious level because "you may not be able to explain what you did or why you did it" (Ulrik, FGT1). Temma in the same focus group agreed that this was sometimes the case but she remained uncertain how generalizable Ulrik's assertion was.

In summary, gauging one's creative strengths and limitations had a social component for adolescents in that they sought feedback and guidance from teachers and peers. They seemed to focus on the social impact of their creativity to gauge the creative quality of their products. Teachers providing opportunities for their students to seek the perspectives of others was therefore considered important.

*4.3.4.3 Knowing when and where to be creative*

Adolescents, like Toni, were aware that "you really also need to learn *when* to use your creativity and how you can apply it properly to different scenarios" (my italics, IntA). Some occasions demanded creativity and others didn't. Deciding whether to be creative or not was often based on how it would impact academic grades. Rory, a new student, expanded on this in the context of science and mathematics, subjects in which he felt if he tried to be creative, he might be penalised. For science, he commented that "I could maybe express my own opinion and that could give me not the same points as saying what he wanted to hear" (IntA). Tasks assessed on criterion B in mathematics, seeking patterns, was often cited by adolescents as encouraging creativity, yet Rory remained unconvinced that creativity would be rewarded. Instead, he usually played safe and wrote what the mathematics teacher wanted to read:

> *You can play it safe and follow carefully the instructions or maybe you could find a pattern in your way … without really following the steps. But then again, I don't know if that's going to count as an error or as a positive thing.* (Rory, IntA)

Rory may have been struggling to know how to stay within the boundaries of showing disciplinary understanding or alternatively, interdisciplinary solutions may have been discouraged. This last possibility was not explored.

Teachers concurred that it wasn't always necessary to try and be creative, although disciplinary knowledge can open up more opportunities for it:

> *I don't think that everything needs a creative approach. The basic understandings of things lead to a much high creative level of things. For example, you don't need to creatively express that 2+2=4. However, to approach calculus and higher understandings in math, a creative thought process is important.* (Anonymous 2, QueT).

The second type of occasion which demanded knowing when to be creative involved adolescents knowing to switch between being 'inside the box' (following disciplinary norms) and 'out of the box' when embarking on a creative task. This theme was introduced in section 4.3.1.1 on clarifying disciplinary boundaries. There was a belief among adolescents that being creative involved both, and the attention paid to each

depended on the demands of a task. Prioritising 'inside the box' thinking often set conditions for high quality creativity to occur (such as following rules and patterns to produce an original musical score as Bela explained in section 4.3.1.1). Thus, it seemed important for adolescents that they learned when to pursue disciplinary knowledge and when to apply creativity, and to effectively dance between them.

Although sparsely mentioned by adolescents, there were opportunities for them to choose *where* to develop and present their creativity in the school, and it was important to take advantage of setting if they wanted to be creative. In section 4.3.2.3, I reported how Inma and Toni believed that those who performed a play in the conventional classroom seemed to have less success than those who chose to do it elsewhere.

#### *4.3.4.4 Knowing your creative mindset*

While it was acknowledged that nature played some role, there was a strong feeling that it was predominantly nurture that explained differences in creativity. This nurture influenced your attitude or mindset towards being creative. Knowing their creative mindset helped adolescents take advantage of creative opportunities and guidance. They had a belief that they could be successfully creative if they wanted to; it was a positive mindset which was sometimes linked with creative efficacy. José described how this mindset was helpful as he compares a creative opportunity to taking a penalty kick in football:

> *I'm a football player. When you're taking a penalty in football, the one thing that people normally tell themselves is 'don't miss, don't miss' but if you do that then you're more likely to miss, and if you say 'I'm going to score, I'm going to score', you're more likely to score. So if you tell yourself, if you fail once … 'OK, I can't make this mistake again', you're probably going to like mess up or think you mess up because of this mindset. But if you say 'OK, I'm just going to try it out and I'm going to do it, I'm going to succeed at this', then you're probably more likely to do it. So I think it's more state of mind.* (IntA)

Fostering creativity was a two-way endeavour since "a teacher can develop a student's creativity as long as the student also wants to develop his/her creativity"

(Anonymous 13, QueA). There was a responsibility on the student to exert effort into developing this mindset:

> *I think that if they tried everyone could be creative but some people do not want to try. You have to change the way you think and some people are unwilling to do that. (*Anonymous 17, QueA)

Trying to be creative meant taking advantage of creative opportunities afforded to them by teachers by, as examples, "continuously engaging in activities which encourage creativity" (Anonymous 13, QueA) and "practising and putting yourself in every situation that needs you to be creative" (Anonymous 16, QueA). Therefore, it was apparent that "the more the teacher puts you in situations which demand creativity the more you will develop it" (Anonymous 17, QueA). Knowing and developing your mindset were the responsibility of both teacher and student.

#### *4.3.4.5 Knowing why to be creative*

Having established that creativity was held in high esteem among adolescents, there remained the question of why it was. Many adolescents felt assured it helped them learn at deeper levels by for example enabling them to "think of new ways to solve a problem, help the student understand that there are multiple ways to understand something new" within academic contexts at school (Nora, ODFA). Adolescents also identified out-of-school problem-solving contexts such as at work and in daily scenarios:

> *Well, it can definitely help you in your life after school. Depending on how what job you do, you're going to need that on a different level but it's a good skill to have because it applies in a lot of scenarios even if you might not think about it. And just day to day problem-solving, I think that can also help you.* (Toni, IntA)

It was also common for adolescents to give personal happiness and well-being as a major reason for fostering creativity:

> *It just encourages positivity in my opinion. You can never go wrong with creativity no matter how creative you are.* (Tom, IntA)

> *... if you do something that is creative, it has got a bigger impact than something that wouldn't be creative maybe has or it's got more of a happy thing.* (Inma, IntA)

Teachers also felt strongly about this last aim. When I asked them in the first focus group why foster creativity, there was agreement with Temma's response that it gave joy and a purpose for living, with Yvona also tying creativity with 'spiritual well-being', although not necessarily within a religion. Like many adolescents, Ulrik added that creativity allowed deep learning to occur:

> *Temma: I think there's a lot of joy in creating. It gives a good reason to even be alive. you know. Everyone wants to be creating.*
>
> *Yvona: ... spiritual well-being ... in the regular context of a school, I don't think these kids are understanding what does it mean to be a spiritual human-being because their common questions to me are 'is that like a religion' and I say 'well, it doesn't have to be, it can be related or associated with a religion'. For me, creativity is a spiritual process. When you create something, it's this shared value that we all have this meaning in life where we can create and express, and hopefully have the freedom to do so. So, I think for me, that's one of the huge benefits is this connection to humanity....*
>
> *Ulrik: I would agree with those points. Also, it may also deepen learning because you have more ownership, you're applying things ....*
>
> (FGT2)

#### *4.3.4.6 Summary*

Retrospectively, adolescents believed that being consulted upon and sharing their perceptions about creativity with others helped them understand what creativity involved, raised awareness when and how they could be creative, and helped them to consider the importance of being creative. For teachers, they also believed they had a greater understanding of creativity by being consulted with others, and they believed they were in a better position to encourage creativity in their students. Both teachers and adolescents emphasised the central role of questioning and of non-directive guidance from teachers and peers during the creative journey. In teachers'

terms, this ‘formative assessment' helped adolescents develop a greater understanding of creativity in all its aspects.

Shaping creative metacognition, awareness of creativity and the creative self, emerged as a significant theme for adolescents, although the term ‘creative metacognition’ was not used. Compared to the other three major categories (shaping disciplinary relevance, shaping student empowerment, and shaping personal and social relevance), adolescents tended to make less clear links between creative metacognition and teachers' actions for shaping it. For example, being consulted upon during the research was perceived to develop a deeper awareness of creativity, and likely helped their creativity. Yet, this belief was not often directly related to something teachers do or could do to foster creativity. Similarly, there were no direct links made between how adolescents’ perceptions of why creativity should be fostered, or why discussions on this theme, helped develop their creativity. By suggesting aims of creativity such as well-being and deeper disciplinary understanding, adolescents raised the possibility of possible tensions if teachers viewed the aims of creativity otherwise. For example, if teachers viewed creativity as principally about well-being, and adolescents saw it as predominantly about raising academic achievement, tensions could arise if students did not see links between being creative in tasks and higher academic scores, or if they feared creativity could be an obstacle to academic achievement. As it happened, teachers thought similarly, and whether this was coincidental or an indication of classroom practices remained unclear. For that reason, it seemed worthwhile to suggest that shaping an understanding of ‘why be creative’, and balancing different perspectives, would be a worthwhile practice for fostering creativity.

### 4.4 Alignment of beliefs between adolescents, teachers and researchers

As revealed in the presentation of the data, teachers and students shared many similar perceptions about creativity in this study. Differences between adolescents and their teachers tended to exist as matters of degree rather than as opposites. When I sent them the summary of the research finding by email (see Appendix AC),

teachers and students commented on this alignment and on how much they enjoyed reading both sets of perspectives. They agreed with the findings.

> *It was very interesting reading through it and I agree with what you said and found the teacher comments interesting too.* (Inma, EmlA)

> *I was also gratified to see that student and teacher responses were often similar.* (Ulrik, EmlT)

### *4.4.1 Alignment of beliefs about the nature of creativity*

In Table 4.4, a summary is presented of the perceptions of adolescents and teachers regarding the nature of creativity, and how these relate to the creativity literature. There is much alignment, and where differences occur, they are briefly mentioned. Novelty and value were emphasised by all participants as central to explaining creativity. Adolescents and teachers viewed creativity as more as a mindset than a set of specific skills, with this mindset being present in everyone to some degree. By referring to the literature review, the beliefs of adolescents, teachers and creativity researchers are well aligned.

Table 4.4: *How the perceptions of adolescents and teachers align with creativity researchers on the nature of creativity.*

| ***Concept*** | ***Students' perceptions*** | ***Teachers' perspectives*** | ***Creativity literature*** |
|---|---|---|---|
| Novelty | Ideally, creativity involved coming up with a new or unique product, whether it be an idea or actual object. Process is important. | Similar with greater emphasis on process. | Product-focused definitions consistently include novelty (Beghetto & Kaufman, 2009b). Similar to adolescents' views in Lassig's study (2012). |
| | This product could be new or unique to the world, to the school, to the class or just to the creator him/herself. | Similar. | This aligns with the mini-c, little-c, pro-C and Big-C creativity of Kaufman & Beghetto (2013) |
| | Creativity could be viewed through the lenses of person, process and product. | Similar, although process was emphasised more. | Evident in literature (Rhodes, 1961). |
| Value | The creative product had an impact or was useful to at least one person (the creator). | Similar. | Product-focused definitions consistently include value. |
| | Creativity was often seen, but not always, as about solving a problem. | Similar although to a lesser degree. | Some have emphasised this component of creativity (such as Klahr & Simon, 1999, in science). Others stress the importance of problem-*finding* (Runco, 2004). |
| | While freedom of personal expression was important, creativity involved much more. | Personal expression was discussed in the context of other properties. | Creativity has long been associated at a basic level with freedom of personal expression (Amabile, 1996) |
| Disciplinarity | All subjects involved creativity; it wasn't confined to the Arts. | Similar. | Widely acknowledged (Cropley, 2001; Sawyer, 2012). |
| | Subjects within the arts and English language and literature encouraged creativity more than other subjects due to the nature of the subject and the nature of the teacher. | Similar. | Lassig had a similar finding with adolescents' perceptions (2012). |
| | The creative process was different in different subjects although there was some overlap. | Similar. | Widely acknowledged (Julmi & Scherm, 2015; Kaufman & Baer, 2005). |
| Remixing ideas | Creativity sometimes involved using and building on pre-existing ideas. | Similar. | Some have defined creativity in this way (Henriksen et al, 2015) |
| Follow-through | Creativity usually did not emerge through sudden or 'eureka' moments, but rather through conscious efforts to continue building on ideas and finalising an outcome. Creativity needed time. | Similar. | Widely acknowledged (Brinkman, 2010; Claxton 1998, 2001). |
| Mindset. | Creativity is something everyone has, and you can develop it a lot or a little. | Similar. | Widely acknowledged (Runco, 2004). |
| | Being creative was more about having an attitude, 'state of mind' or mindset, and was less about having specific skills. | Similar. | A growth mindset has been suggested as the most important factor for creative achievement (Dweck, 2012; O'Brien, 2012; Sternberg, 2010) |
| | In general, creativity was not something that could be taught; rather your creativity could be encouraged. | Teachers tended to give a broader meaning to what teaching involved such as giving feedback and enabling social interactions | 'Encourage' has been suggested by Makel as well (2009). |
| | Creativity often happened without you realising it. | Similar. In addition, some believed it may not be possible to fully describe your creative processes. | Similar (Sawyer, 2012). |

### *4.4.2 Alignment of beliefs about shaping disciplinary relevance*

In Table 4.5, a similar summary is presented regarding the shaping of disciplinary relevance, and once again, there is strong alignment. Some teachers suspected that their students would not appreciate the importance of disciplinary knowledge for creativity, so it was perhaps surprising to them it was otherwise. The creativity literature has little to say on the degree that MYP criteria assess for creativity.

Table 4.5: *How the perceptions of adolescents and teachers align with creativity researchers on shaping disciplinary relevance.*

| ***Boundary*** | ***Students' perceptions*** | ***Teachers' perceptions*** | ***Creativity literature*** |
|---|---|---|---|
| *Shaping disciplinary relevance* | Creativity needed both subject-specific and general elements. | Similar. However, not all teachers agreed general creativity skills could be applied to all subjects. | There is recognition of domain-general and domain-specific creativity (Kaufman & Baer, 2005). Adolescents thought subject-specific knowledge was especially important in science and mathematics (Lassig, 2012). |
| | Subject-specific knowledge was largely necessary for showing subject-specific creativity. | Similar. | Widely acknowledged (Kaufman & Baer, 2005). Starko also highlights the importance of methods (2013). |
| | Feedback from teachers helped guide subject-specific understanding of creativity. | Similar. Teachers discussed various formative assessment strategies. | Widely acknowledged (Csikszentmihalyi & Wolfe, 2014; Wiggins, 2011). |
| | Summative assessment tasks ought to reward creativity. | Similar. The dangers of using grades as external motivators were suggested. | Widely acknowledged (Lassig, 2009; Sawyer, 2012; Wiggins, 2011). |
| | All MYP assessment criteria can reward creativity. Some teachers apply creativity to at least some of the criteria, and some tend not to. | In some ways, similar, although there was a more critical view that the wording in the criteria was vague. | This is not explicitly referred to in IB documentation. |
| | Interdisciplinary learning encouraged creativity although this was referred to by relatively few students. | Similar. While this was mentioned in questionnaires and 1-to-1 interviews, it was only briefly referred to in group discussions. | Widely acknowledged (Csikszentmihalyi & Wolfe, 2014; Sawyer, 2015). |
| | It was motivating when teachers clearly stated that creativity was expected in a task, and gave possibilities of what that creativity could look like. | Similar. There was less discussion on how a teacher introduced a task. | Explicitly encouraging creativity has been suggested by Langer (1997) and Halpern (2010). Runco has suggested using examples of creative products (2010). |

### *4.4.3 Alignment of beliefs about shaping student empowerment*

Table 4.6 summarises these alignments. Both adolescents and teachers believed that empowering students encouraged creative thought and action, while they also stressed that boundaries were important for shaping this empowerment. The creativity literature supports this positive relationship between student empowerment and creativity.

Table 4.6: *How the perceptions of adolescents and teachers align with creativity researchers on shaping student empowerment.*

| ***Boundary*** | ***Students' perceptions*** | ***Teachers' perceptions*** | ***Creativity literature*** |
|---|---|---|---|
| *Shaping student empowerment* | Creativity was encouraged when they felt a sense of freedom, neither too much or too little. | Similar. | Widely acknowledged (Cropley, 2001; Runco, 2010). |
| | Having boundaries such as timelines, deadlines, and disciplinary task specifications encouraged creativity. | Similar. There was significant discussion on this point. | Widely acknowledged (Plucker & Dow, 2010; Stokes, 2010). |
| | Being consulted upon and having a voice about the choices available in the process and product of classroom tasks encouraged creativity. | Similar, although there was limited discussion on this. | This is commonly advocated (Starko, 2013). |
| | Having opportunities to decide whom they talk with and when they did so, and with being alone, fostered creativity. | Similar. The final point was discussed more. | Amabile refers to the importance of informal environments for self-directed learning (1996). |
| | Creativity was encouraged when teachers modelled creativity and demonstrated traits such as open-mindedness, friendliness, love of job, and positivity. | Similar. Teachers modelling creativity and creativity-related traits were identified as particularly important. | Widely acknowledged (Piirto, 2011; Sawyer, 2012; Renzulli & De Wet, 2010). |
| | To foster creativity, the physical design of the classroom needs to accommodate group and individual learning spaces, and easy access to resources. | Similar. | Widely acknowledged (Davies et al, 2012). |

### *4.4.4 Alignment of beliefs about shaping personal and social relevance*

Once again, I present a summary through Table 4.7. Creativity seemed to be held in high esteem at CEIS. This overview of perceptions once again shows similar beliefs held by adolescents and teachers, and which aspects of the creativity literature concur.

Table 4.7: *How the perceptions of adolescents and teachers align with creativity researchers on shaping personal and social relevance*

| ***Boundary*** | ***Students' beliefs*** | ***Teachers' perceptions*** | ***Creativity literature*** |
|---|---|---|---|
| ***Shaping personal and social relevance*** | Tasks needed to have personal relevance and sometimes they also need to feel that their efforts will have social impact. | Similar. | Widely acknowledged by for example Amabile (1996). |
| | Social recognition and genuine praise encouraged creativity. | Similar, although teachers talked less about praise and more about sharing constructive feedback. | There are diverse views. Widely acknowledged is that excessive praise undermines creativity as it may promote extrinsic motivation (Amabile, 1996). However, verbal praise, feedback on progress and recognition (eg grades) can encourage creativity (Amabile, 1996). Praise is most effective when it is related to task criteria (Drapeau, 2014). |
| | Adolescents felt that other students appreciate creativity in others and praise it spontaneously. Creativity was held in high esteem among students. | Similar. Teachers also felt that creativity was a good thing and that it was valued by students. | This has not been widely reported, with many reporting that peer-pressure inhibits creativity (Amabile, 1996; Runco, 2010), although adolescents in Lassig's study highlighted how peers' attitudes influenced creativity (2012). |
| | Students appreciate when they have an opportunity to share what they have creatively thought of or done. | Similar. | Widely acknowledged that students need ample time to share perspectives (Sawyer, 2012). Adolescents in Lassig's study enjoyed sharing to get recognition or a reaction (2012). |
| | One important aim of creativity was to develop self-esteem and well-being. Being creative gave feelings of satisfaction. | Similar, although teachers discussed more the need of society to have creative people in the workplace. | The positive psychology literature associates happiness with creative self-efficacy (Hill, Tan & Kikuchi, 2008), the creative process ('flow') (Csikszentmihalyi, 1997), and creative individuals (Rasulzada, 2014). Implicitly, adolescents rejected the common view (such as Tan & Gopinathan, 2000 and Wagner, 2012) that fostering creativity is primarily about helping young people learn skills required by employers. |

### *4.4.5 Alignment of beliefs about shaping creative metacognition*

Again, I give a summary of this section in Table 4.8. This section was data rich and frequently linked with the other main categories.

Table 4.8: *How the perceptions of adolescents and teachers align with creativity researchers on shaping creative metacognition.*

| **Boundary** | **Students' beliefs** | **Teachers' perceptions** | **Creativity literature** |
|---|---|---|---|
| ***Shaping creative metacognition*** | Discussing creativity led to a greater awareness of how creativity can be applied to learning. | Similar regarding their own participation. | Kaufman & Beghetto support this pedagogical approach (2013). |
| | Pursuing and receiving feedback from teachers and peers on how creative they were, guided accurate self-assessment. | Similar, although there was no discussion on the last point. | Widely acknowledged for teacher feedback (Kaufman & Beghetto, 2013). Adolescents have reported this (Lassig, 2012). |
| | They sometimes were unsure whether to be creative in tasks and felt the need for teachers to clarify this. | Similar although less discussion on the teacher's role in advising. | Kaufman & Beghetto support this strategy (2013). |
| | Having the opportunity to be creative in unfamiliar places helped develop self-awareness of where to be creative. | Not discussed. | Learning how to be creative involves practice, including taking advantage of locations (Sawyer, 2012). |
| | Understanding the role of mindset made you more open to taking guidance on board and trying to be creative. | Similar but minimally discussed. | Has been acknowledged by some such as Dweck (2006) and Sternberg (2010). |
| | It was important to appreciate that not all learning (including assessment tasks) required creativity. | Similar. This was discussed in significant depth. | This has been pointed out by Kaufman et al (2016). |

## 4.5 Shaping boundaries, the core category

The data was presented against the backdrop of four main themes or categories, namely shaping disciplinary relevance, shaping empowerment, shaping personal and social relevance, and shaping creative metacognition. I considered 'Perceptions of the nature of creativity', discussed in section 4.2, a concept within the category 'shaping creative metacognition'.

As a core category, '*shaping boundaries*' integrated these four themes. In applying the criteria described by Corbin and Strauss for what qualifies as a core category, 'shaping boundaries' as a concept, seemed to explain the relationships between the

four major themes, to be representative of what the adolescents perceived, and was sufficiently abstract enough to be used in any similar future studies (Corbin & Strauss, 2015).

'Shaping' was an obvious term to apply to the core category as the four main themes apply this word. This 'shaping' was predominantly seen as the role of the teacher, who could influence a multitude of elements and interactions in the classroom's learning environment. The verb 'shaping' implies that the process was ongoing; it involved teachers continuously making adjustments, fashioning a creative environment, and encouraging approaches to learning that maximised adolescents' capacities to be creative. I view shaping as dynamic in that in that there are many forces at play that influence adolescents' creativities, and these forces vary in impact between individual adolescents, from one adolescent group to another, and from one subject or situation to the next.

'Boundaries' represented the perceived parameters in applying each of the four main categories. For the theme of 'disciplinary relevance', the teacher ensured that creativity occurred within the realms of the subject so that there was not too much 'out of the box thinking' at the expense of 'in the box' or disciplinary thinking. In 'shaping empowerment', teachers struck a balance between providing too much and too little adolescent autonomy so that self-directed learning maximised creativity. 'Shaping personal or social relevance' involved the teacher creating an environment where adolescents found meaning in the curriculum while pursuing their own creative accomplishments as well as give feedback to others. Ideally, the teacher ensured there were sufficient and balanced opportunities for individual and group actions so that there was personal and social relevance placed on creativity. Finally, 'shaping creative metacognition' involved a multifaceted array of teacher actions that helped guide students to understand the nature of creativity, to assess accurately their creativities, to seek and recognise their creative strengths and limitations, and to develop their capacities to be creative. This teacher guidance ideally aimed to strike a balance between being too directive or limiting and with being too laissez-faire or expansive. The model in Figure 4.1 illustrates the relationship between the core category and the four main categories for encouraging creativity in the

curriculum. This model, called the DERM model, is explained more comprehensively in section 4.6.

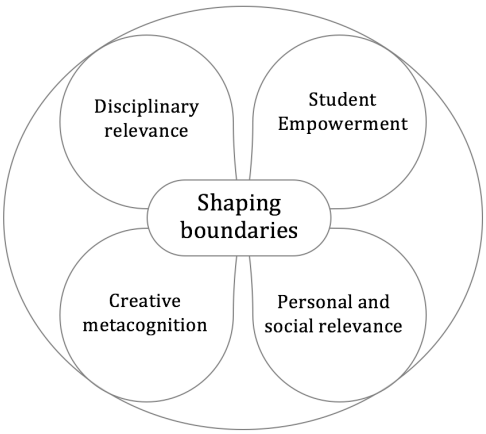


*Figure 4.1:* The relationships between the core category and its four major themes

Apart from the *core category* and its four major themes or *main categories*, the presentation and analysis of data also introduced other themes or *sub-categories*. Each of these sub-categories had one or more characteristics or *properties* which varied in their range or *dimensions*. These are summarised in Table 4.9.

Table 4.9: *Relationships between categories, properties and dimensions*

| Core Category | Main Category | Sub-category | Property | Dimension |
|---|---|---|---|---|
| Shaping Boundaries | Shaping disciplinary relevance | Ensuring disciplinary learning | Understanding of discipline | Mastery ↔ Shallow |
| | | | Task boundaries | Disciplinary ↔ Logistic |
| | | | Presenting creatively | Discipline ↔ General |
| | | | Responding creatively | Discipline ↔ General |
| | | | Nature of tasks | Creative ↔ Non-creative |
| | | | Teacher professionalism | High ↔ Low |
| | | Guidance of disciplinary creativity | Formative assessment | Frequent ↔ Rare |
| | | | Advice | Domain-specific ↔ Domain-general |
| | | | Task-specific guidance | Frequent ↔ Rare |
| | | | | Positive tone ↔ Negative tone |
| | | | | Gentle ↔ Harsh |
| | | | Exemplars | Multiple ↔ Single |
| | | | | Diverse ↔ Similar |
| | | Rewards | Creativity in criteria | Clearly present ↔ Absent |
| | | Interdisciplinary learning | Interdisciplinary units | Frequent ↔ Rare |
| | Shaping student empowerment | Personal and social design of classroom | Rules | Few ↔ Many<br>Loosely applied ↔ Strictly applied |
| | | | Seating arrangement | Groups ↔ Pairs<br>Flexible ↔ Inflexible |
| | | Social design of classroom | Access to peers | Easy ↔ Difficult |
| | | | Being independent | Easy ↔ Difficult |
| | | Physical design of classroom | Movement | Free ↔ Restricted |
| | | | Access to resources | Free ↔ Restricted |

| | | | | |
|---|---|---|---|---|
| | | Stance of teacher | Traits | Open ↔ Closed<br>Flexible ↔ Rigid<br>Friendly ↔ Distant<br>Happy ↔ Unhappy<br>Professional ↔ Unprofessional<br>Caring ↔ Uncaring |
| | | Creativity of teacher | Teacher as role model | Creative ↔ Not creative |
| | | Open-ended tasks | Tasks with choice | Group ↔ Individual |
| | | | Tasks with limitations | Helpful ↔ Unhelpful<br>Extended time ↔ Little time |
| | | Creative products | Value | Practical ↔ Impractical<br>Shared ↔ Not shared<br>Owned ↔ Not owned |
| | | Student consultation | Sharing perspectives | Frequent ↔ Rarely<br>Influential ↔ Not influential<br>Different views ↔ Similar views |
| | | Teachers questioning | Nature of question | Open ↔ Closed |
| | | | Responding | Discouraging ↔ Encouraging |
| | Shaping personal and social relevance | Relevant process | Meaning | Interesting ↔ Boring<br>Merit ↔ No merit<br>Irrelevant ↔ Relevant |
| | | Relevant product | Emotional attachment | High ↔ Low<br>No effort ↔ Effort<br>Persistence ↔ No persistence |
| | | Seeking perspectives | Peer engagement | High ↔ Low<br>Feedback ↔ No feedback<br>Motivating ↔ Demotivating<br>Praise ↔ Criticism |
| | | Product sharing | Presentation of ideas and products | Engage ↔ Disengaged<br>Feedback ↔ No feedback |
| | | Teacher praise | Recognition from teacher | Authentic ↔ Tokenistic |
| | | Guiding social recognition | Peer and social recognition | Positive ↔ Negative |
| | | | Rewarding creativity | Higher grade ↔ No impact |
| | | Enabling accomplishment | Pride | High ↔ Low |
| | Shaping creative metacognition | Self-awareness of the nature of creativity | Novelty | Social ↔ Personal |
| | | | Value | Impact ↔ No impact |
| | | | Personal expression | Personal ↔ Impersonal |
| | | | Disciplinarity | All subjects ↔ Arts<br>General & specific ↔ General creativity<br>Transferable ↔ Non-transferable |
| | | | Remixing ideas | Often ↔ Rarely |
| | | | Follow through | Product ↔ Idea |
| | | | Mindset | Open ↔ Closed<br>Flexible ↔ Fixed |
| | | | Self-knowledge of creativity | High ↔ Low |
| | | Dialogue | Dialogue with peers | Interactive ↔ Absent<br>Frequent ↔ Rare |
| | | | Dialogue with teacher | Interactive ↔ Absent<br>Frequent ↔ Rare |
| | | Guidance of self-assessment | Peer feedback | Aware ↔ Unaware |
| | | Guiding creative process | Development of creativity | Aware ↔ Unaware |
| | | Guiding creative places | Location | Risk-taking ↔ Conservative |
| | | Application of creativity | Determining Creative/uncreative tasks | Aware ↔ Unaware<br>Not applying ↔ Applying<br>Taking risks ↔ Playing safe |
| | | Questioning purpose | Purpose of creativity | Personal ↔ Social<br>Domain-general ↔ Domain-specific |

## 4.6 DERM, a proposed model for encouraging creativity in the curriculum

### *4.6.1 Introduction*

Students preferred to use the terms 'encourage creativity' or 'help with creativity', rather than 'teach (for) creativity' or 'foster' creativity. Makel has suggested that encouragement is an appropriate term because it "focuses attention on promoting and assisting what is already there" rather than artificially adding something to what is not, thus making it inclusive to all (2009: 40). This ties in with students' perceptions that everyone has creativity, and this is more about having a certain mindset than a set of cognitive skills.

DERM is an abbreviation for the four major themes or boundaries that adolescents believed encouraged their creativities, as shown in Figure 4.2.:

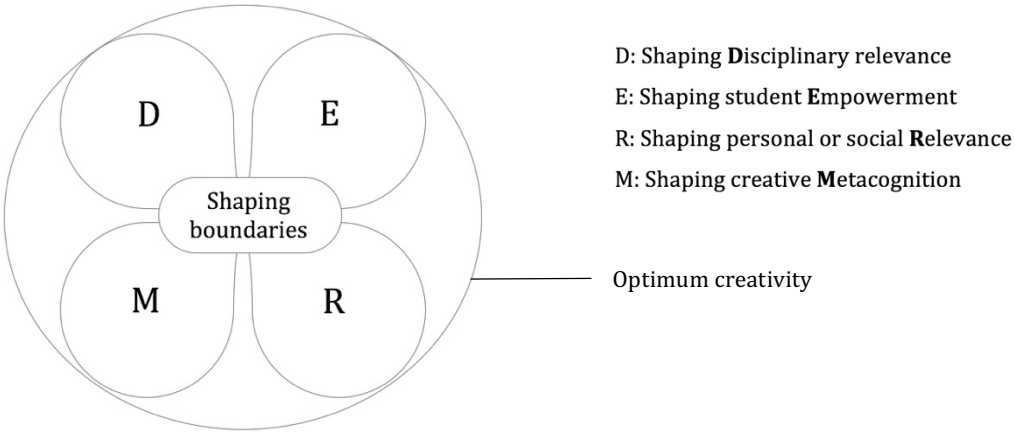


*Figure 4.2* DERM model in abbreviated form

The outer circle represents the maximum extent each boundary encourages creativity. The DERM model originates in what students at CEIS said. While they did not directly come up with this model or the four boundaries, I interpreted their perceptions in this way. As indicated, the viewpoints of students and teachers were very similar so to a significant degree, the model also represents the perceptions of teachers. The model aims to provide teachers at CEIS with practical approaches to fostering creativity in the final two years of the MYP that have the advantage of being supported by adolescents. A general overview of some of these teaching practices is found in the more detailed model in Figure 4.3.

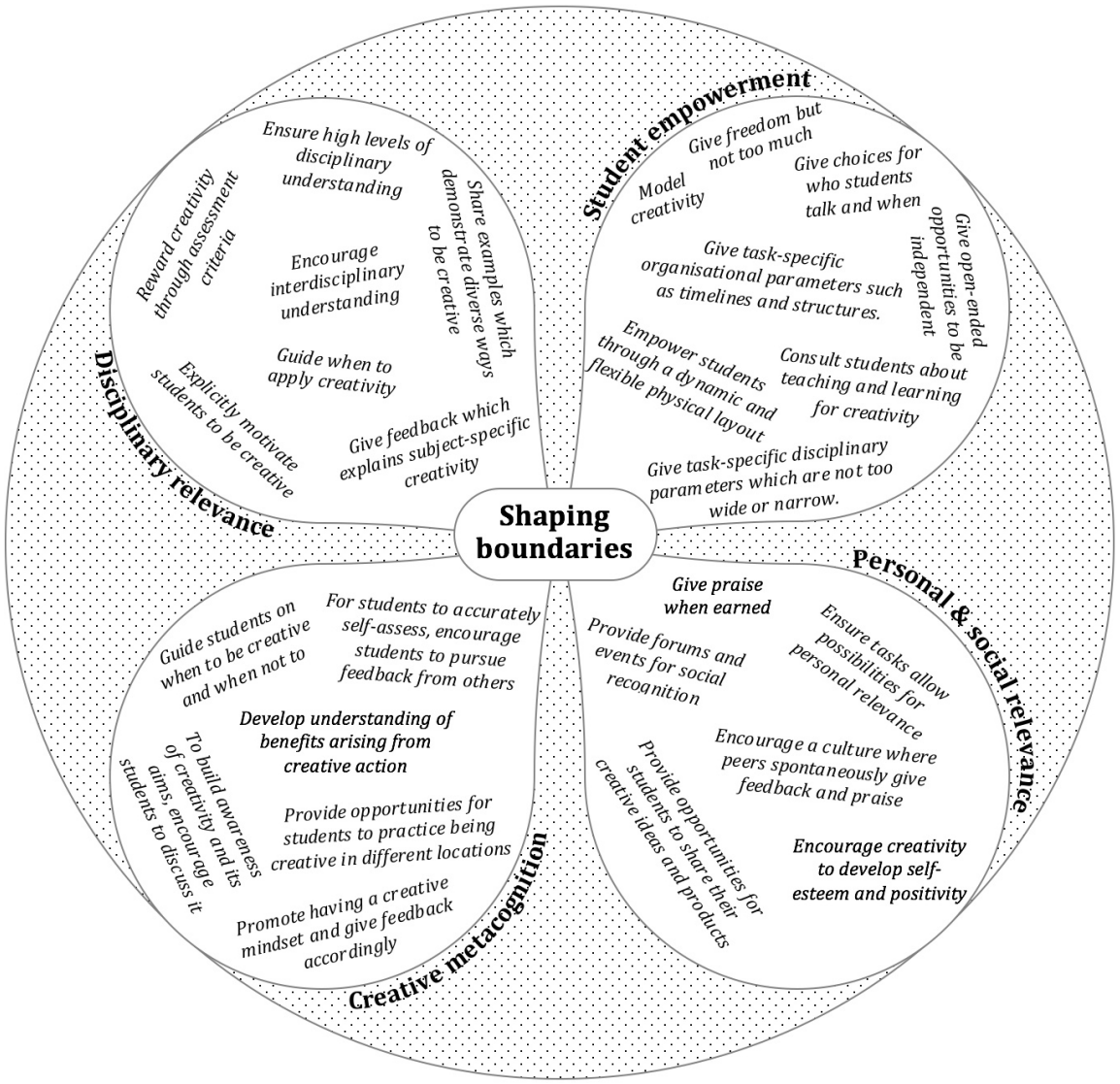


*Figure 4.3* DERM model in detailed form

These four major categories, while distinct approaches, have areas of overlap. For example, empowering students will likely make learning more relevant on personal and social levels. Similarly, developing creative metacognition may deepen understanding of the disciplinary relevance of the activity or task. By paying attention to shaping the relationships between boundaries, as well as shaping the elements within each, teachers encourage creativity. They are boundaries because there are limits in effectively applying each of them. You can emphasise the shaping of each too much or too little and so reduce the overall quality of the creative environment. Emphasising any one boundary too much runs the risk of paying less attention to other boundaries. For example, emphasising disciplinary relevance with everything adolescents do may give them feelings of disempowerment, make it less personally relevant to them, and may limit opportunities for students to understand their

creativity (see Figure 4.4). Another example is emphasising personal relevance too much may lead to less emphasis on disciplinary relevance.

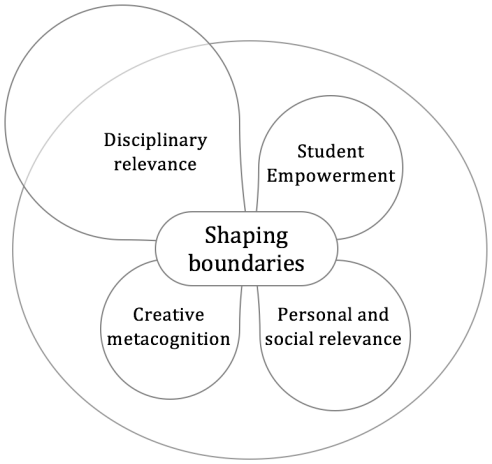


*Figure 4.4:* Impact of emphasising disciplinary relevance too much

In a similar fashion, not placing enough emphasis on shaping any one boundary in creative tasks will likely result in less adolescent creativity. For example, little emphasis on shaping creative metacognition will result in adolescents gaining few opportunities to learn about creativity and its personal development as they undergo a task within the subject. This lack of guidance could easily result in what I have called 'shot in the dark' creativity. Too little emphasis on shaping personal and social relevance may result in adolescents being uninterested in creative tasks in 'pointless' creativity. Not considering the empowerment of students sufficiently may result in top-down, authoritarian pressure to be creative resulting in 'submissive' creativity. Finally, paying little attention to disciplinary relevance will likely mean adolescents struggle to be creative in that subject, resulting in applying other disciplines to showcase their 'out of bounds' creativity. Figure 4.5 shows these four possible scenarios and Table 4.10 summarises what they mean.

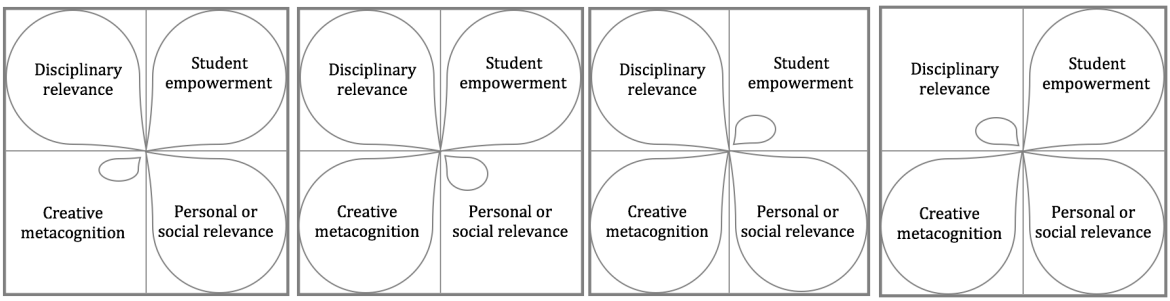


*Figure 4.5:* Types of creativity when teachers do not shape one boundary sufficiently

Table 4.10: *Four possible scenarios when de-emphasising one boundary*

| ***Boundaries emphasised*** | ***Boundary not emphasised*** | ***Creativity that may occur*** | ***Effect*** |
|---|---|---|---|
| DER | M (creative metacognition) | *Shot in the dark* creativity | When there is little emphasis on students developing creative metacognition, there is a danger that they will think they are being creative when they are not. |
| DEM | R (personal and social relevance) | *Pointless* creativity | When there is little emphasis on the personal and social aspects of learning, there is a danger that they will be disconnected from what they are doing, they will feel bored and they will have little interest in being creative. |
| DRM | E (student empowerment) | *Submissive* creativity | When there is little emphasis on empowering students, there is a danger that they will either obey the rules blindly without understanding or they will rebel against them. |
| ERM | D (disciplinary relevance) | *Out of bounds* creativity | When there is little emphasis on students learning deeply about the subject, there is a danger that they will not learn to apply creativity to the subject. They may only use creativity in a very general, artistic and uncoordinated way. |

Using the DERM model aims to create awareness of four critical elements of fostering creativity. It emphasises that learning to be creative is not an add-on to the curriculum but part of it. There are occasions when it would be unwise to apply your creativity to situations and problems, and other times it would be helpful to apply it to deepen and show understanding.

### *4.6.2 Linking DERM model with the literature review*

While the DERM model is grounded in the data, there are some links between it and other theoretical models. Amabile's componential theory of creativity is relevant to, and to a significant extent reflected in, the DERM model. To recall, this theory focuses on the interactions between the 4Ps, more specifically stating that domain-relevant skills, creativity-relevant processes and intrinsic task motivation (the within-individual components), and the social environment (the external component) all interact with each other in a creative act (Amabile, 1983; 2012). Domain-relevant skills equate to the teacher's role of *shaping disciplinary understanding*. Creativity-relevant processes refer to some elements of *shaping creative metacognition*, such as guiding the how, when and where to be creative. It also includes modelling and

encouraging creativity traits. Finally, intrinsic task motivation refers to some elements within *shaping personal and social relevance*, specifically those that focus on the individual rather than the social.

Empowerment has frequently been associated with encouraging creativity, although researchers have predominantly placed it in an adult and workplace context (Alge et al, 2006). An exception is Cooke who observed, in her case study of 12 to 14-year old students at a US public school, that trusting, positive teacher/student relationships and student empowerment were the two key factors in classroom environments that encouraged student creativity (2013). Cooke, however, presented a hierarchal model stating that relationships dictated the level of student empowerment rather than operating in parallel (2013). It was not evident at CEIS that there was a hierarchal structure in the main categories that emerged.

The literature review highlighted the recent attention being paid to creative metacognition, and this study highlighted the importance adolescents attached to it. Kaufman and Beghetto have similarly urged teachers to develop students' creative metacognition by helping them understand what creativity is, what the costs and benefits of creativity are, their self-knowledge of creative strengths and limitations, and when creativity can be helpful (2013). The findings of this study add support to the theoretical paper of Kaufman and Beghetto.

## 4.7 Summary of findings

This chapter presented the findings by responding to the three research questions:

# 1. How do adolescents define creativity?
# 2. How do adolescents perceive creativity being encouraged by teachers?
# 3. Between adolescents, teachers and researchers, how aligned are beliefs about fostering creativity in the curriculum?

It culminated in the presentation of a model grounded in the data. Called DERM, it offers a framework for encouraging creativity in adolescents to teachers. It integrates the core category 'shaping boundaries' and its four major themes 'shaping

disciplinary relevance', 'shaping student empowerment', 'shaping personal and social relevance', and 'shaping creative metacognition'.

# Chapter 5: Conclusion

## 5.1 Introduction

The notion of consulting students about aspects of their schooling is no longer a radical approach within schools and in educational research. Research on creativity in education is becoming increasingly popular, undoubtedly due in part to the attention paid to it in popular media. Consulting young people about creativity would seem a reasonably unsurprising approach. It is, yet only with young children in the primary school (3 to 11 years) and with older students in university (18 and over). Research on adolescent creativity is sparse in any setting. The limited research tends to focus on variables that influence psychometric measurements of creativity, especially on children identified as creative (such as Lassig, 2013). Thus, I approached this study with a belief that adolescents' insights can usefully inform pedagogy that encourages creativity for all adolescents within the curriculum.

## 5.2 Synthesis of findings

I now give a short overview of the responses to the three research questions:

1. How do adolescents define creativity?
2. How do adolescents perceive creativity being encouraged by teachers?
3. Between adolescents, teachers and researchers, how aligned are beliefs about fostering creativity in the curriculum?

I integrate findings for research question #3 into responses to #1 and #2. The presentation and analysis of data pertaining to #1 reflected an understanding of creativity by adolescents and of teachers that aligned comfortably with current interpretations in the creativity literature. Rather than force an adolescent-generated single definition of creativity, I sought to understand those aspects that they believed gave the word its meaning. These aspects or properties were novelty, value, disciplinarity, remixing ideas, follow-through, and mindset. I found it surprising that

adolescents had perceptions so closely aligned with both teachers and creativity researchers. Numerous studies have indicated the conflicting views about creativity between children and teachers (such as Slatter, 2009), children and creativity researchers (Turner, 2013), and between teachers and creativity researchers (Turner, 2013).

As clarification emerged on how adolescents perceived creativity, #2 became a greater focus of exploration. The adolescents believed creativity was encouraged more at CEIS than local or their previous schools. While certain subjects and teachers were singled out for not encouraging creativity, their commentaries were invariably upbeat, and they primarily talked about what teachers did to encourage creativity rather than what they did not do. Teachers' practices could encourage creativity only if they, the adolescents, wanted to be creative. I found that many of these descriptions of creativity-fostering practices involved shaping certain boundaries. In other words, the adolescents believed that being creative involved operating within boundaries set by the classroom's physical and social environment.

Their perceptions of what teachers did to shape this creative environment seemed to fall into four main categories. These were disciplinary relevance (D), student empowerment (E), personal and social relevance (R), and creative metacognition (M). This conclusion led to the development of the DERM model for fostering creativity in the curriculum that aims to provide teachers with a practical tool. While the model offers an interpretation of what adolescents perceive, it appears compatible with current theories about creativity, such as those already discussed of Amabile (1996) and Kaufman and Beghetto (2013). Again, I was surprised that adolescents and teachers agreed on many creativity-fostering practices within this model, and that these practices have been suggested to varying degrees in the creativity literature. Nevertheless, the broad agreement between adolescents and teachers on the model did not imply that everyone had the same perceptions. There were different degrees of agreement and varying levels of importance given to creativity-fostering practices.

## 5.3 Implications of the study

In its narrowest sense, the study offered participating adolescents opportunities in individual and social settings to explore the nature of creativity and how it was encouraged in the curriculum, with the result that many of them believed they had become more creative. Similarly, for participating teachers, they believed they understood creativity better and developed a keener sense of awareness of encouraging it more explicitly.

Continuing to apply the findings narrowly, I believe the findings have significance for adolescents at CEIS studying in the final two years of the IB MYP, and their teachers. While encouragement of adolescent creativity was perceived to involve a diverse array of interacting components, the DERM model represents these perceptions in an easily remembered visual fashion. For adolescents, the model offers a way that they can take advantage of and identify occasions conducive to creativity, or set conditions themselves that encourage their creativity and its development. The model offers teachers at CEIS a practical approach to fostering creativity grounded in adolescents' perceptions. In other words, the practices suggested in the DERM model would likely have 'buy-in' from their students. Furthermore, the close alignment between the beliefs of teachers and adolescents indicate that the model is also accessible and non-controversial to teachers.

In a slightly wider context, the findings likely have relevance for all adolescents at CEIS, their teachers, and the pedagogical leadership teams. The model offers a resource for the school to consider either as it stands or to further develop. I have offered to share the findings in teacher and student workshops at the school, and although there is support for this proposal from the MYP Coordinator, dates have yet to be confirmed.

There is a possibility that it is relevant for parents and guardians of adolescents at CEIS, as they consider ways that they can support their children at school, and to have meaningful conversations with them and with their teachers. Parents may even wish to apply the model in non-school settings although I am unsure if it applies equally to these even if adolescents sometimes gave out-of-school examples.

In a much broader sense, the findings may be relevant to adolescents, teachers, school leaders and guardians in all schools, especially those who are in international schools implementing the MYP. The most obvious way to communicate the findings to other schools is through easily accessible publications, and to a lesser extent through an academic journal. As a flagship or "tier 1" (Bunnell, 2014: 23) international school, CEIS is also in a strong position to influence practice elsewhere. Teachers and students frequently change schools and bring ideas with them, innovations at the school have been published in IB and other education literature, and the school frequently hosts education workshops open to educators worldwide. The findings are also grounded in the close alignment of perceptions of adolescents, teachers and researchers, with this shared understanding undoubtedly arising in part from a school culture at CEIS in which creativity was actively encouraged in many classrooms. Thus, in some ways, the model reflects the views of informed participants because they could frequently practice being creative as well as learn from and encourage it in others. In other words, the views were based on their experiences rather than on abstract contexts. If other schools see value in these views, they will, of course, need to consider their school's unique context so that they can apply the findings appropriately.

Finally, the research has implications for researchers in the fields of creativity, MYP and international schools. By paying attention to adolescent voices and empowering them to direct the research through a GT approach, it may encourage researchers to use broadly similar strategies to build a more inclusive description of teaching and learning. This encouragement is especially directed to international schools where adolescent voice research is lacking.

## 5.4 Limitations of the study

There are some significant limitations, some of which I now discuss. These are representation of participants, timings of data collection and theoretical sampling, choice of methods, and the contexts in which the findings are applicable.

Participants represented themselves, not other adolescent or teachers. While this question of representativeness is important in scientific, quantitative research, it is less so in GT research (Strauss & Corbin, 1998). Instead, I was more concerned with how concepts were represented in the samples, and with developing these concepts further (Corbin & Strauss, 2015; Strauss & Corbin, 1998). My aim was not to generalise findings or apply percentages to how many people experienced this or believed that. Instead, it was to reach an in-depth understanding of how creativity and its encouragement were perceived and to try to determine some underlying conceptual relationships.

Nevertheless, in determining the applicability of the findings, it is important to gauge the extent findings are representative of others. No effort was made to share the findings with all adolescents in the two year-groups and with all their teachers to gauge its representativeness. However, the MYP Coordinator considered the adolescents to represent a diverse group in terms of creative accomplishments (as well as of academic achievements and English proficiency), although there was no attempt to demonstrate this empirically. Only 38 adolescents (or 26%) from the two year levels completed the questionnaire, and I am unsure if those that participated are significantly different to those that did not. For example, did they represent adolescents who had parents with time and interest to complete the consent forms? Or quite simply, were they those who were most interested in creativity? Similarly, I am unsure if the thirteen adolescents who pursued their participation further after the questionnaire had distinguishing characteristics. Were they simply those that were most confident or felt most self-conscious with saying no? Similarly, only 9 teachers (or 30%) completed the questionnaire and pursued their participation. In summary, I did not determine the degree of representativeness of participants.

Data collection occurred irregularly and in narrow time frames. This meant that theoretical sampling (of concepts) was often rushed. I think this was less of a problem in the early stages when many concepts were being explored, including those that emerged from the questionnaires. However, as concepts began to be narrowed down, short time spans between data collections restricted my capacity for theoretical sampling, most notably when I conducted all 1-to-1 and 1-to-2 interviews on one day. In analysing the data further after these interviews, I noticed some themes that

deserved more attention. For example, in section 3.7.2, I mentioned how I thought adolescents' perceptions of connections between interdisciplinary learning and creativity remained relatively unexplored within the main category 'shaping disciplinary boundaries'. I also would have liked to have probed further adolescents' sense of ownership of creative products (a theme that emerged more clearly in the final interviews with adolescents), and teachers' perceptions of encouraging creativity in students with limited English proficiency. Finally, I believe there were opportunities to explore in more depth some elements of the main concept 'shaping creative metacognition' such as the strategies adolescents used to assess the creativity of their products (for example, who did they approach, how did they take on board critical feedback, and how did personal reflection occur?) and how adolescents developed their understanding of the nature of creativity. Theoretical saturation of these and other concepts would have generated a more comprehensive theoretical model. The model would likely have included more conditions and variations resulting in it having more precision and explanatory power (Strauss & Corbin, 1998).

The online discussion forum was for the most part unsuccessful in exploring concepts further and discovering new ones. While the participants expressed enthusiasm for it and encouraged me to start them, I somehow was not able to make it an enticing and interesting platform for them to have discussions.

As I indicated in sections 3.7 and 5.3, the findings of this case study may be rich in description and explanatory power for the context of CEIS but they are not easily generalizable to other contexts. I offer little advice with how other schools can determine the extent to which the findings apply to them, except I have noted that they likely more easily apply to schools that consider themselves international and which offer the IB MYP.

## 5.5 Future directions for research

One obvious direction for future research is the degree that the DERM model is useful to MYP teachers at CEIS and those in other international schools. I believe such

research would help change or refine the model to ensure its precision and practicality. In adapting the model, another possible direction is to focus on the strategies that adolescents (not teachers) use to develop their creativity. This could lead to a model that places more emphasis on how adolescents consciously direct the development of their own and other's creativity. For example, how do the four boundaries of shaping disciplinary relevance, student empowerment, personal and social relevance, and creative metacognition manifest themselves in adolescents self-directing their creative capacities.

There are also directions that could be taken in MYP research. An interesting area for further study is how MYP assessment criteria are applied by teachers to reward creativity. Given that the IB believes its education "fosters creativity and imagination" (IB, 2014: 11), the findings might be helpful as the IB continually reviews the MYP framework, and confirms its commitment to creativity. IB-published assessment criteria are one of the most concrete ways that the MYP clarifies and commits to its educational philosophies. Another possible area for MYP research is the degree that perceptions about creativity align between MYP schools, and between MYP and non-MYP schools.

These are all possible directions for future research. Of course, there are other possibilities which are more specific and probably more personal. For example, I would be interested in understanding better the alignment of feedback during the creative process provided by adolescents, teachers and assessment criteria. These and other possible directions for research might help clarify the complex nature of interactions that foster creativity in the curriculum.

## 5.6 Final words

This study had an impact on me. While I have been involved professionally with schools for nearly 30 years, I was once again surprised with what young people said and how they did so. I probably assumed that adolescents would have naïve views of creativity and perpetuate common myths about it. If I did, I was hopelessly wrong. Instead, they made me reflect critically on my own naïve views of creativity. Teachers

also made me reconsider my views. For example, adolescents and teachers made me rethink the conditions for which creative presentations could more likely happen. I was surprised by the extent that peer pressure and social recognition were perceived to encourage adolescents' creativity. I learned that adolescents could look favourably at having boundaries, and the trick for teachers was choosing them wisely. In these and many other ways, adolescents and teachers helped me reformulate my understanding of creativity.

It has become popular for adults to claim that schools knock the creativity out of young people (even one senior administrator at CEIS said this to me in casual conversation). This was clearly not the sentiment of many young people at CEIS. To the contrary, they were often proud to highlight the diverse ways that the school shaped the creativity of young people.

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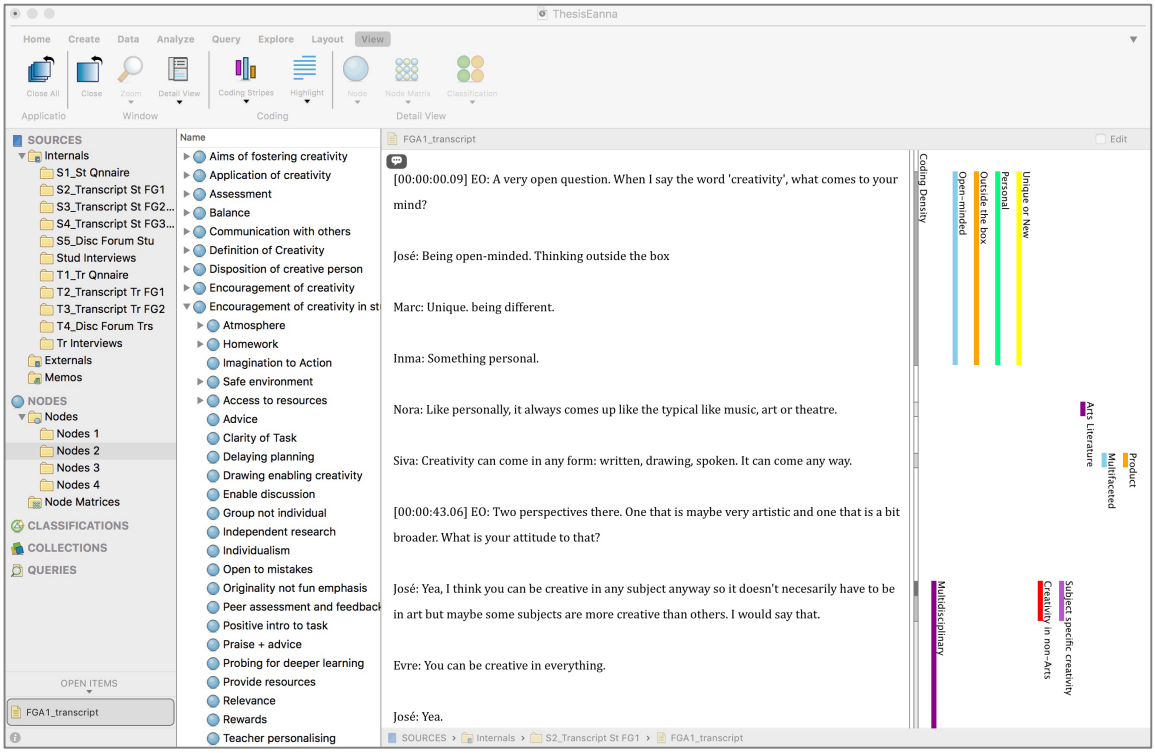
# Appendix A: Example of a coded interview transcript

Below is a screenshot of the coding of the first adolescent focus group (FGA1) using Nvivo 10 for Mac (version 10.2.2). This illustrates an early phase of coding. As well as showing the transcript's coding for the beginning of the focus group discussion, the screenshot also indicates the data sources (left column) and a segment of the codes (categories and concepts). In this Mac version of the software, it is not possible to export or print coding from a transcript (see screenshot below). Thus, I have shown the full transcript's coding in an alternative format in the pages following the screenshot.




Screenshot of coded transcript using Nvivo 10 for Mac

EO: A very open question. When I say the word 'creativity', what comes to your mind?

José: Being open-minded. Thinking outside the box

Marc: Unique. being different.

Inma: Something personal.

Nora: Like personally, it always comes up like the typical like music, art or theatre.

Siva: Creativity can come in any form: written, drawing, spoken. It can come any way.

EO: Two perspectives there. One that is maybe very artistic and one that is a bit broader.

What is your attitude to that?

José: Yea, I think you can be creative in any subject anyway so it doesn't necessarily have to be in art but maybe some subjects are more creative than others. I would say that.

Evre: You can be creative in everything.

José: Yea.

Evre: Everybody have to do something and you can do it in a creative way.

Suda: It can be perceived in different ways depending on the person.

Nora: Somethings are more recognised such as Math, usually it's recognised more as specific ways to do it. But there's always going to be another way to solve it even though it might not be a lot of variety, there is probably going to be a different way to approach something and that's why I agree with José that creativity is usually something that you can use to solve problems, think outside the box.

Definition of creativity/ Problem-solving

[00:02:04.20] EO: Do you think creativity looks different from subject to subject?

Definition of creativity/ Multidisciplinary

Siva: In a certain sense, yes. Maxi.

Toni: Well, I think. I don't think it really looks very different but I think it's perceived different because when you think about creativity, I think a lot of people will think first 'oh that's going to be one of the arts'. But like you can use creativity when doing anything, when doing problem-solving, or just thinking about a solution to something in real life situations.

Definition of creativity/ Problem-solving

Definition of creativity/ Real life application

Sara: I think it's. Yea, I think it's the same in every subject and it doesn't differ. It's all thinking differently and thinking something different from what others might think. It's something personal. Therefore I say that it's just the same in all the subjects but with different ways of thinking for every subject.

Definition of creativity/ Unique or new

Definition of creativity/ Personal

Definition of creativity/ Type of thinking

Definition of creativity/ Subject-specific creativity

José: Yea, it's like the same but with different results.

Definition of creativity/ Subject-specific creativity

Sara: Yea.

Evre: I think it's like just an attitude of problem-solving. If you have to solve a solution, it's just your attitude to the problem.

Definition of creativity/ Problem-solving

Definition of creativity/ Mindset or attitude

EO: So, it's more to do with attitude?

Evre: Yes, maybe it's perceived in different ways per different subjects. Like for art you do something and then in music you do something else, but then it's your attitude.

Definition of creativity/ Subject-specific creativity

Definition of creativity/ Mindset or attitude

Definition of creativity/ Type of thinking

Nora: Yes, I agree that creativity is also based on yourself like obviously creativity is a different way of thinking. If someone asked you to solve a problem, I might come up with a solution that is different than someone else and they both might work. It's just creativity is not everyone thinking the same way. It's more of an open.

Nature of task/ solving a problem

Definition of creativity/ Problem-solving

Definition of creativity/ Value

Definition of creativity/ Unique or new

EO: It might be worthwhile thinking about what creativity is. It's one of the questions I asked and people have different ideas of what creativity is. Can anyone dare to come up with what you think it is... what is creativity?

Siva: Expression of ideas in multiple different [pause] or in a form that is perceived by others. I'm not sure.

Definition of creativity/ Expression

José: A process of ideas and thoughts that are unique and different from others or different than what maybe the product should look like.

Definition of creativity/ Process and product

Inma: It's another way of doing things.

Definition of creativity/ Unique or new

Evre: Yea. It's maybe like a way of showing your ideas through doing something.

Sharing products of creativity

Marc: A mindset or an attitude that someone has to express different things in different ways.

Definition of creativity/ Mindset or attitude

Definition of creativity/ Expression

EO: Is it enough to be different. That come up a lot: unique, different. Is that enough to be creative?

Siva: Depends. It depends on what sort of unique. If your uniqueness is more based towards for example, you're very good at art and that's what makes you, or something that can help make you, unique, then that's a very specific way of being creative. But if you're very good at maths and sciences, then you can be creative in a different way in that by finding new ways of solving problems or finding new ways to look at a problem. But that's also a creative mindset, so different, depending.

Definition of creativity/ Subject-specific creativity

Definition of creativity/ Problem-solving

Definition of creativity/ Mindset or attitude

Definition of creativity/ Unique or new

Nora: I think it doesn't need to be different to be something creative. Of course, obviously some things are seen as more creative, different ideas, but everything can be created in some specific way. So it doesn't need to be completely different from another idea to be creative. It just has to have something in it that is not different but...

Definition of creativity/ Building on previous ideas and products

Evre: it could be like maybe similar to someone else's idea or someone else's thing but then it's your way to do it like you thought with your own mind and you did it by yourself.

Definition of creativity/ c-creativity

Definition of creativity/ Having ideas

Disposition of creative person/Follow-through

Marc: I think if you're different you can have great ideas but you still have to develop them. And sometimes it's also hard, harder to do it if you're different because maybe like it's a different way of thinking and it's harder for people to believe you or agree with you. So you have to be very strong with and clear with different [inaudible]

Disposition of creative person/ Unfavourable idea

Disposition of creative person/ Selling an idea

Sharing products of creativity

EO: What do you mean by develop? You talk about an idea and it has to be developed as well if I understand correctly?

Communication with others/ dialogue

Marc: Yes.

Disposition of creative person/Follow-through

EO: What do you mean by that?

Marc: So, for example, if you have an idea of solving a math equation in a different way. or something like that, then you still have to keep going with that idea, developing, and keep thinking about it and see how it can be improved. Just like as if it was a normal idea but maybe it's different. You just have to continue.

Disposition of creative person/Resilience

Disposition of creative person/Follow-through

Definition of creativity/ Process

Disposition of creative person/Follow-through

EO: What's it like at the end?

Inma: Well I wouldn't really say there is an end because you can keep on going maybe and you might stop at one point because that is what you are happy with. You could always keep on going.

Process of creativity/ Improving product continuously

EO: So when you have something at the end, what constitutes something creative when you have this thing at the end?

Disposition of creative person/Follow-through

Nora: Can you repeat the question?

EO: I'm really following up on what Marc said that it's about developing, and it's about following it through so that you for example solve a problem. And maybe there is no end. I am interested in whether it is enough just to have ideas. Is it important to develop those ideas and is it important what the final thing is?

Process of creativity/ Ideas and product

Nora: Obviously, the final idea, it's not usually. For it to be my way. For it to be creative, it's something, as Marc said, is developed from an idea to come into real life. For example, if I'm doing a piece of art, a painting, I can't just say my idea. It has to come through development and at the end when you look at it, maybe you will say 'this is something developed from my idea which could be classified as creative depending on how you approach it.

Definition of creativity/ Real world application

Disposition of creativity/ Process

José: I think in order to be creative, you don't really need a result. You could develop an idea. You could think of something and that could be creative but you might not for example finish it, finish the product or something., but at the same time you're being creative because you thought of that idea. You had that idea.

Disposition of creative person/Follow-through

Disposition of creative person/Personal

Disposition of creative person/Follow-through

Marc: I think what's important is the process you go through when like José says. Maybe you find yourself with a final product or maybe you're not so successful in finishing whatever you're doing but it's important the process you go through while thinking because that's what expands you, like the creativity.

Definition of creativity/ Building on previous ideas and products

Siva: Creativity is also kind of a chain reaction in a way because someone can be inspired by someone else's idea even if it's not a physical product or if it's not like a giant painting in the wall, maybe it's just a spoken idea. It can still be inspiring to the next person to inspire a different idea or something else from that to broaden their creative variety in a way.

EO: Would you say that the product, in general terms of a creative process, will be inspiring?

Marc: No

Siva: Not necessarily.

Definition of creativity/ Impact

Marc: To someone maybe.

Siva: To someone possibly. Not necessarily.

Nora: Not necessarily at all or not necessarily to everyone?

Siva: Not necessarily to everyone.

Nora: I do believe that if it's a process that is created, I agree that not everyone needs to be inspired. But if someone is inspired by it, then it means it has a greater effect than if everyone just looked at it.

Definition of creativity/ Impact

EO: When in school do you feel most creative?

Siva: When I am given the freedom to do something that I'd like as opposed to doing something that is set out for me.

Nature of task/ Open-ended tasks

Encouragement of creativity in students/ Choice in product

Encouragement of creativity in student task/ Choice of process

José: When you get to design the task yourself. When you design what you want to do yourself. It's not like we aren't given a template or something but we have to develop our own ideas, and our own way of how we want to learn. Model the final assessment or something.

Encouragement of creativity in student task/ Parameters

Encouragement of creativity in student task/ Exemplars and modelling

Nature of task/ Open-ended tasks

Inma: I think it helps if you're told to be creative, if the teacher specifically says 'I want everyone to be creative and do their own thing and they let you loose like that.

Encouragement of creativity in student task/ Parameters

Encouragement of creativity in student task/ Intro encourages creativity

Encouragement of creativity in student task/ Group not individual

Nora: I personally also believe that in being creative sometimes I enjoy being in groups because then you can pop an idea if you have an idea, someone else can add on to that idea or say that idea is good or maybe not that good for them. So it's a kind of a way of developing and using different types of creativity to build something.

Encouragement of creativity in student task/ Peer assessment and feedback

Marc: There's no set final wall. For example, maybe you have to write an essay for a class but instead I would say I'm more creative if you can do a presentation, do a video, so your range of final product you can basically adapt to for what's best for you.

Sharing products of creativity/ Presentations

Toni: I think even if you have specified instructions, like I know some people say, or some teachers say, that we have to have a spoken presentation but we can choose what props we might have with those or how we create that presentation. Encouragement of creativity in student task/ Parameters in task

Evre: It's like maybe when you have to achieve a pass or a number, you are free in how you are going to arrive there, how you're going to finish it. To arrive there you have to do it, like an essay, but you can do it how you want it. Encouragement of creativity in student task/ Parameters in task Encouragement of creativity in student task/ Choice of process

Nora: Yes, it's pretty much having a basic of what you're trying to achieve but having the freedom of doing what you believe would achieve this. Balance/ Open & closed instructions

EO: Is it total freedom? This response varied in the online questionnaire. Some people felt it was a lot of freedom. Others felt that there were boundaries, that it was important actually to have boundaries. Where do you fit with all of that?

José: I think it is kind of important to have boundaries, or maybe not boundaries, but maybe an end goal because that can kind of inspire you to think of an idea or inspire you to think of something that would reach that goal. Encouragement of creativity in student task/ Parameters in task

Nora: Yea. I agree that having boundaries may not be the only thing you need but it's good to have it because it kind of sets you, as José says, where you want to go but also like to make sure you focus on that point so you don't get another idea and completely forget about the previous idea you had. Disposition of creative person/ Follow-through Disposition of creative person/ Staying in context

Siva: That happens to me a lot.

Nora: Yea.

Toni: I think you always have basic boundaries because especially when doing schoolwork, you're always going to have that one boundary of the due date or of the time you have to work on it. So, I agree with what we're saying

Disposition of creative person/ Follow-through

Encouragement of creativity in student task/ Parameters in task

Marc: I think school subjects give you boundaries so they allow you to be creative but also keep you on track. So I think it's helpful boundaries. It's hard to, because maybe too much freedom doesn't get you a good result.

Balance/ Open & closed instructions

Balance/ Open and closed instructions

EO: In terms of creativity?

Encouragement of creativity in student task/ Parameters in task

Marc: In terms of finishing something maybe. You could have a lot of good and creative ideas but then maybe with not a boundary like a deadline or a final product you have to make, maybe then you lose, you have a lot of creative ideas but you never go into depth with one or you just don't develop an idea as much as you should.

Encouragement of creativity in student task/ Time/ Deadlines

Disposition of creative person/ Follow-through

Nora: I agree that everything automatically gets a boundary especially some types when it comes to creativity. Because for example if I'm going to design a house, I have to think about money and things like that. So I can't just design whatever comes to my head even though it could be something that helps me get somewhere. If you want to be realistic, creativity is important, but setting boundaries will also help you create a thing that can be applied more to real life.

Encouragement of creativity in student task/ Parameters in task

Definition of creativity/ Real life application

Encouragement of creativity in student task/ Parameters in task

Inma: I think you can be creative. It doesn't matter what the boundaries are like but the boundaries just change the process because they either have to make you speed up a bit because you have a deadline or something like that.

Encouragement of creativity in student task/ Time/ Deadlines

Siva: There's also things like personal boundaries to stop yourself from getting too invested in an idea that you don't see the other opportunities around you. So it's kind of boundaries to stop you from creating an obsession instead of an idea.

Balance/ Open and closed instructions

Disposition of creative person/ staying in context

EO: So in terms of creativity, would you say it's good to have some boundaries or is it just a practicality of being in school?

Sara: I think it's very necessary to have boundaries because boundaries make the creativity seem more realistic, something that you can achieve at the end. However, without boundaries, maybe you are creatively a little bit more idealistic, something that maybe cannot be reached. Something that cannot be achieved.

Disposition of creative person/ Realistic and practical

Disposition of creative person/ Follow-through

EO: What are your thoughts on that, Adam, in terms of creativity? When you think of creativity, what do you think of?

Adam: Creativity happens when you solve a big problem like she says when we can make a house and we have to think about the costs.

Application of creativity/ Application outside school

Nature of task/ Solving a problem

EO: Another item that was mentioned was boredom, that unintentionally, teachers can encourage creativity when you feel bored in a classroom. It seems ironic in some ways, you could say. That was something that came out from the online questionnaire that sometimes boredom can actually promote creativity on a personal level. What do you think of those thoughts?

Encouragement of creativity/ Atmosphere/ Boredom

Siva: I know that one. I like to sketch a lot and often times my best sketches come out of me being very very bored in class, just doodling in my books.

José: I think if you're bored, or if you're bored with the question, or if you're bored and you don't know, you can stop. I think that time gives you time to think to yourself. Because usually when you're bored, you don't have other things to do. So then it gives you time to think, time to think outside the box, making you creative.

Encouragement of creativity/ Atmosphere/ Boredom

EO: Can you recall occasions. Do you think when you're bored and you have these ideas that sparks the imagination when you feel bored and think of other things, do you think that can often lead to ideas being developed? Or is it more 'I feel bored' and you start imagining things and then creativity and the creative process stops at that stage? In other words, at what point are those seeds for creative thought developed during those moments of boredom?

Evre: I think when you're bored, you have time to think about when you want so maybe you could think about something that link you to creative ideas or to something that you never thought before.

Disposition of creative person/ Personal

Inma: I think when you're bored, it's your own ideas because no one else is distracting you and you're not getting ideas from other people, just from yourself.

Suda: It depends on how realistic the ideas are. If you're just kind of day-dreaming then it might not even be possible.

Disposition of creative person/ Follow-through

Encouragement of creativity/ Atmosphere/ Boredom

Marc: I think when you're bored, you're by yourself or you get to think of a lot of ideas but then most of the time you don't really follow them or develop them because, like as Suda says, maybe you're daydreaming and all these things that could maybe happen. But most of the time you don't really get to them.

Disposition of creative person/ Follow-through

Nora: I personally believe it depends where you are and what's going on at that time. For example, if I am in my Summer house and I am bored, I usually decide to go and build something, sometimes I build onto that, or change the idea, but if I'm in an apartment in the middle of nowhere and I really don't have anything to do then I think that my [pause]. It depends on the opportunities you have around you. Yes, if you don't have anything to do, and you really don't have anything you could work on, then you're probably not going to go anywhere but in the imagination. But if you have the chance to do something, then.

Encouragement of creativity/ Atmosphere/ Boredom

Encouragement of creativity/ Access to resources/

EO: In terms of creativity being valued here at school, I'll start with one question - do you think that assessment criteria in the MYP value creativity and teachers' use of them?

Assessment/ Application of criteria

Inma: Some do and some don't. I think there's always a way of fitting creativity into something. Like when you think about maths, I think Criterion C is communicating, you could write things down in a slightly different way that is creative. or with Knowledge and Understanding, it could be that you worked it out in a different way that isn't directly focused on creativity. It's just that you putting creativity into it.

Definition of creativity/ Multidisciplinary

Assessment/ Assessment for creativity

José: Going back to math, like we have these criterion B tests where we have to find our own patterns and I think that's usually, then we have to use some creativity because it's an unfamiliar situation that we haven't really learned about in class so then we have to think of creative ways in order to solve a problem. So I think there, creativity is valued even though it might not say in the criteria but as part of the task it is.

EO: I have one question which I am very interested to hear your thoughts on. In the questionnaire, many mentioned the importance of teacher and peer feedback. Feedback seemed to mean a few things in that online questionnaire. What do you mean by feedback whether it's from students or teachers?

Encouragement of creativity in student task/ Feedback

Nora: It's probably like based on what you have done, and if other people believe it's going to work, or if it makes sense and everything. From getting feedback, of what other people believe, you can develop either further, solve problems they pointed out that you haven't noticed, or having their feedback saying it was really good. They also can support you and make you want to do more in something.

Valuing creativity/ Self-esteem

Encouragement of creativity in student task/ Feedback

Siva: I know when I'm stuck on an idea or stuck for ideas, I'll go to my friends and I'll pitch my idea to them and they can bounce my idea back at me with a different perspective. And so this gives me the opportunity to change my idea or to find other influences for my idea.

Process of creativity/ Seeking feedback continuously

Communication with others/ Questioning

EO: So it's to do with perspectives?

Siva: mmm, a little bit, yes.

Toni: And getting their response of what they think about it because also you can get really motivated a lot by what people say 'it's a great idea' and then you feel you can get motivated and achieve that.

Encouragement of creativity/ By students

EO: What do you think of that, judgment, if someone makes a judgment on your idea?

Nora: It depends on how they respond to your idea. If they're extremely negative and judging your work in a very unsupportive way that could affect you to so not be as creative or not wanting to create more. But if they're judging in a way you can open up to what else you can create then it changes.

Valuing creativity/ Self esteem

Assessment/ Judgement

Encouragement of creativity/ By students

Encouragement of creativity in student task/ Feedback

Evre: If it's constructive feedback, they say what they think just to help you, you can use it and it's really helpful for you to understand maybe what's not going really good and what can improve. But they're saying it in a better way.

Encouragement of creativity/ By students

Encouragement of creativity in student task/ Feedback

Nora: I think something that helps me a lot especially when it comes to things like creating essays and things like that based on my opinion, when I think I'm done I would always have someone else read it because then I can have an idea of how I can make my ideas more clear and things like that, and then I feel more secure about my work. So I think for creativity getting feedback is extremely important.

Disposition of creative person/ Selling an idea

Disposition of creative person/ Uncertainty

Definition of creativity/ Personal

Toni: I think it also depends on the end result like you're trying to make something for yourself then I don't think you need other people's feedback because it's for yourself and it's how you made it. But for example, if you're making like for an assignment for school, something like that, then you need other people's feedback in order to see how you can improve in order to make the final result more successful.

Communication with others/ Presentation

José: I think when you have more of a written or a spoken assignment or when you are saying something, something might seem very clear to you - your ideas and your thought processes just because you've written that or something but when somebody else is reading over it, they might not understand what you mean by that therefore it's very important if it is something for a greater audience that people give their response to that so that you can improve that and be more clear.

EO: Rather unbelievably, it's the end of the session. This is not a question about your perspectives about creativity... if I wanted to follow up with you, what might be some good ways to do that?

José: I would say online if you wanted to talk to us because then we won't have to meet up again, since I think you came from far away, right?

EO: I can come back. Let me write to all of you and think about how we can pursue some of your thoughts. Many, many thanks and I really am very grateful to all of you. Thank you very much.

# Appendix B: List of early codes for categories and concepts

| High level concepts (categories) | Low level concepts |
|---|---|
| Access to resources | Access to samples |
| | Access to technology |
| | Student-provided |
| | Teacher-provided |
| | Use of textbooks |
| Accountability for student success | Teacher accountability |
| | School accountability |
| Aims of fostering creativity | Academic success |
| | Child Right |
| | Happiness |
| | Career |
| | World Citizenship |
| | Problem solving |
| | Personal development |
| Application of creativity | Application outside school |
| | Local community problem |
| Assessment | Measuring creativity |
| | Application of criteria |
| | Judgement – delayed/immediate |
| | Varied assessment tasks |
| | Assessment for creativity |
| Assignments | Diversifying assignments |
| | Parameters |
| Atmosphere | Being unique |
| | Changing perspectives |
| | Collective excitement |
| | Casual |
| | Challenge |
| | Competition |
| | Quiet |
| | Collaboration |
| | Fun |
| | Boredom |
| | Rules and absence of |
| | Safety |
| Background discipline knowledge | Of teacher |
| Balance | Open and closed instructions |
| | Group and individual activities |
| Classroom design | Care for classroom |
| | Hygiene |
| | Mobility of furniture |
| | Multi-purpose classrooms |
| | Access to resources |
| | Colour |
| | Facilitates group activities |
| | Light and dark |
| | Natural elements eg plants |
| | Navigation |
| | Seating arrangement |
| | Space |
| | Student places |
| | Student-created posters & artefacts |
| | Temperature |
| | Use of technology |
| | Wall displays |
| Communication with others | Emotions |
| | Dialogue |
| | Questioning |
| | Presentation |

| | |
|---|---|
| Creativity as tokenism | |
| Creativity in non-Arts | |
| Definition of creativity | C and c-creativity |
| | Building on previous ideas and products |
| | Ethical |
| | Imagination |
| | Impact |
| | Instinct |
| | Natural |
| | Real world application |
| | Spiritual |
| | Type of thinking |
| | Words and phrases - student |
| | Words and phrases -teacher |
| | Arts literature |
| | Discipline-specific |
| | Multidisciplinary |
| | Multifaceted |
| | Process or product |
| | Process and product |
| | Process |
| | Having ideas |
| | Outside the box |
| | Value |
| | Mindset or attitude |
| | Personal |
| | Product |
| | Expression |
| | Problem-solving |
| | Unique or new |
| Disposition of creative person | Uncertainty |
| | Passionate |
| | Realistic & practical |
| | Resilience |
| | Selling an idea |
| | Mindset |
| | Staying in context |
| | Unfavourable idea |
| Domain-specific knowledge | Subject schedule |
| | Subjects fostering creativity |
| | Teaching knowledge |
| Encouragement of creativity in general tasks | Learning or fostering |
| | Nature |
| | Nurture |
| | Nature and nurture |
| | Universality |
| | By age |
| | Seeing it around you |
| | By teachers |
| Encouragement of creativity in student tasks | Imagination to action |
| | Advice |
| | Clarity of task |
| | Delaying planning |
| | Drawing-enabling creativity |
| | Enable discussion |
| | Group not individual |
| | Independent research |
| | Individualism |
| | Open to mistakes |
| | Originality not fun emphasis |
| | Peer assessment & feedback |
| | Positive introduction to task |
| | Praise + advice |
| | Probing for deeper learning |

| | |
|---|---|
| | Provide resources |
| | Relevance |
| | Teacher personalising |
| | Teacher questioning |
| | Balance of individual and group activities |
| | Choice of progress |
| | Enable thinking |
| | Group activities – large, small, pairs |
| | Introduction encourages creativity |
| | School leadership |
| | Sharing diverse perspectives |
| | Teacher talk |
| | Choice in product |
| | Exemplars and modelling |
| | Feedback |
| | Subject-specific knowledge |
| | Parameters in task |
| | Seeking creativity |
| Having Choices | Freedom |
| | Long-term assignments |
| | Access to resources |
| | Open-ended research |
| | Choice in product |
| | Electives |
| | Choice in process |
| | After-school activities |
| Homework | As extension of class |
| | Challenging |
| | Choice |
| | Developing skills and techniques |
| | For knowledge |
| | Linked to previous knowledge or passion |
| | Absence of |
| | Artistic |
| | Assessed |
| | Charts and diagrams |
| | Extended versus short |
| | Individual and group |
| | Open-ended |
| | Personal expression |
| | Planning and preparation |
| | Product |
| | Research |
| | Shared with others |
| | Taking notes |
| Ideas and product | |
| Improvisation | |
| Inclusion | |
| International | Internationalism |
| | International experiences |
| Instinct | |
| Interdisciplinary | |
| Modelling creativity | |
| Movement | Student movement |
| | Teacher movement |
| Nature of task | Originality |
| | Play |
| | Spontaneity |
| | Experimentation |
| | Improvisation |
| | Perspectives |
| | Solving a problem |
| | Student ownership |
| | Artistic |

| | |
|---|---|
| | Extended project (eg PP) |
| | Personal expression |
| | Personalised learning |
| | Process and product |
| | Open-ended tasks |
| Opportunities for creative action | |
| Order | Organisation |
| | Age appropriate |
| Power | |
| Process of creativity | Questioning |
| | Improving product continuously |
| | Knowing subject |
| | Making and overcoming mistakes |
| | Seeking feedback continuously |
| Rationale for creativity | Student career |
| | Happiness |
| Rewards | Grades |
| Safe environment | No right or wrong |
| | Risk-taking |
| Sense of community | Teacher-student relationship |
| | Humour |
| | Student-student relationship |
| | Peer-pressure |
| Sharing products of creativity | Presentations |
| | Not presentation |
| Space | Flexible |
| Student empowerment | Ownership |
| | Choice |
| | Making decisions |
| Student welfare & safety | English proficiency |
| | Making mistakes |
| | Feeling safe |
| | Self-esteem |
| Attitude of teacher | Resilience |
| | Listens |
| | Uncertainty |
| | Thoughtful |
| | Respectful |
| | Reflective (Self-questioning) |
| | Perceived job satisfaction |
| | Disciplinarian vs laid back |
| | Caring |
| | Friendship |
| | Humour |
| | Flexible |
| | Patience |
| | Inclusive |
| | Happy |
| | Democratic |
| | Praise |
| | Open-minded |
| | Connectedness |
| | Engaging |
| | Motivated |
| | Creative |
| | Judgement |
| | Positive |
| Teacher impact | |
| Teacher life experiences | Telling stories |
| | Personalising |
| Teacher vs School vs Subject priorities | |
| Time | Deadlines |
| | Time in class for creativity |
| Valuing creativity | |

# **Appendix C:** Examples of memo writing

**02.02.2016**
**Initial Impressions of responses to Student Online Questionnaire**

Students' responses bring up many perspectives. Some believe that creativity is about doing something that makes you unique or 'grabs someone's attention'. Others focus on the cognitive process involved such as imagination or 'thinking out of the box'. Other responses stress the nature of the product (eg it's interesting or useful). in making something that is. Yet others mentioned that facing a problem encouraged them to be creative. While Arts subjects are often linked with being creative, many also refer to Design and PE/Sports. However, some students refer to other subjects such as Mathematics, Science, Personal Project, English and 'electives'. There was at least one response which higlighted that being creative brings colour to our life and others. Many argure that creativity can be learned although not all. I felt the diversity of responses refreshing.

In response to what they were doing during a creative process, some described a colaborative group effort and some mentioned an individual task or challenge. Most discussed long term tasks of more than a day while others mentioned an in-class activity.

Students tended to give credit to the teacher for encouraging them to be creative although not all thought this. They discussed many ways that treachers encourage creativity (eg giving examples, choices, giving feedback on skills rather than content, having access to resources, challenging students).

**20.02.2016**
The students bring up areas related to student autonomy and choice. Another common theme is parameters. Balance, although not a common word brought up is perhaps an important concept arising from the data. As examples, balance between open and closed-endedness of tasks or activities, between group and individual activities (in various orders) and between extended time and deadlines.

**05.06.16**
Why encourage creativity? This has been evaded by students and teachers and vague responses given.

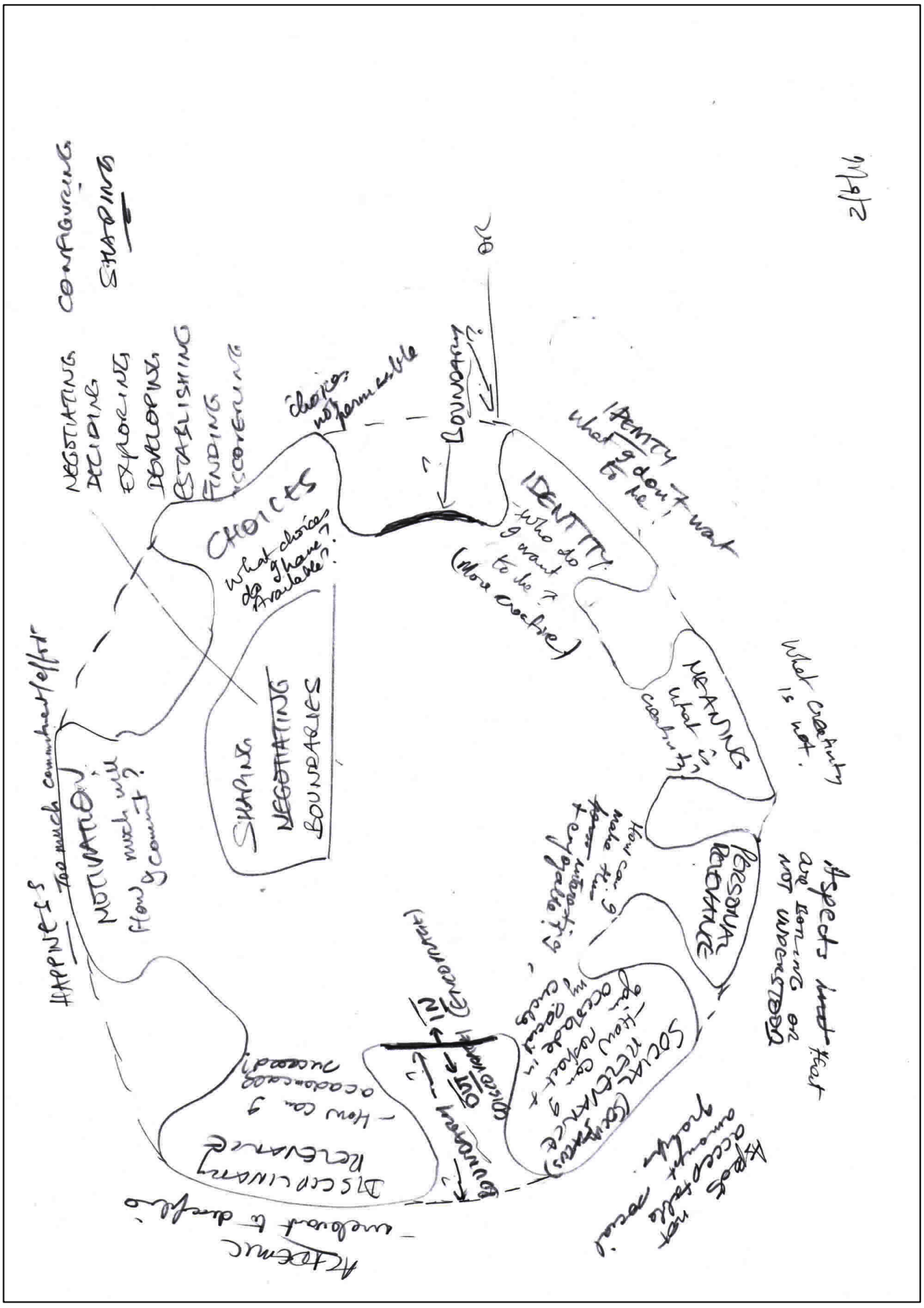
There also seems to be an interesting connection made between being accountable to student academic success and fostering creativity as if too mych of the latter will inhibit student success.

In the discussion forum with students, thread 2 of the aims of encoraging creativity, I wonder what is the connection between creativity and developing as a world citizen? I never imagined this connection... how could I tease this idea more. I don't think asking directly will help, will it?

**08.06.16**

Students are favoring certain words over others when it comes to 'developing' student creativity - developing, encouraging and wanting, but students are not using 'teaching' or 'fostering'. What is the word to use?

**Appendix D:** An example of a memo diagram



# **Appendix E:** First communication with CEIS

**From:** **Eanna O'Boyle** eannaoboyle@mac.com
**Subject:** Creativity Research at
**Date:** 16 November 2015 at 11:11
**To:**

EO

Dear ,

My name is Éanna O'Boyle and I write to you from neighbouring Luxembourg.

I am at the research enquiry stage of my Doctorate in Education (EdD) from the University of Bath. I have received approval from the university to conduct research into students' perceptions of how creativity is fostered by teachers. I am very keen to carry out research in this area at , a school well renowned for its early and continued commitment to the IB. More specifically, I would be keen to survey and interview students in the final two years of the programme (MYP 4 and 5 or what I believe you came grades 9 and 10), as well as their teachers. This would be followed up with focus group interviews, which I would facilitate, with a smaller number of students and teachers.

I attach a letter clarifying the request and the timeline. I also attach draft letters which would go to teachers and students in the event that approval was granted for the research.

A little about myself. I am on a year sabbatical after spending the last five years as Head of (an IB school implementing PYP, MYP and DP). I have been involved in teacher IB programmes since 2002, with the IB as workshop leader, team visitor and consultant since 2006, and I have written about the IB in academic and non-academic forums.

I am happy to discuss this request further in more detail through email. My Skype is eannaoboyle if you would like to discuss these through conversation.

I am fully aware of issues related to confidentiality (with regard to students, teachers and the school) and am fully committed to abiding by these.

Yours sincerely,

Éanna

Date: 16 November 2015
To:
From: Éanna O'Boyle
Re: Permission for EdD research

Dear

This letter seeks approval to conduct educational research at in partial fulfillment of the requirements for the degree of Doctor of Education (EdD) at University of Bath, UK.

The research aims to elicit adolescents' perceptions of what creativity is and how it is fostered by teachers at

The purpose of doing this research, apart from the obvious aim of promoting creativity in schools, is to inform educators of the practices in classrooms that make young people feel they are being creative. Going further, the purpose is to help develop approaches to fostering creativity that are shared and recognised by teachers and students.

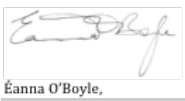
If approval is granted, I aim to carry out the following actions during the 2015-16 school year:

- Seek approval for individual students in MYP4 and MYP5 to participate in the research. This could be through an email to the parents/guardians or through a paper form signed by a parent/guardian. I would seek your advice with how best to seek and collect such permissions. (November/December).
- Seek approval through email for each individual teacher in M4 and M5 to participate in the research. (November/December).
- Enable student participants to complete an online survey. The surveys can be completed anonymously. However, for those who wish to be part of a group interview/focus group, the survey asks for their name at the end of the survey. This last step aims to help guide the appropriate selection of students for the group interviews to ensure sampling is stratified. As examples, the group interview would likely include a cross section of MYP4/MYP5, arrival dates, and students with contrasting viewpoints and experiences. (December/January).
- Enable teacher participants to complete an online survey. (December/January).
- Have an on-site focus group with a small number of students (6-8). This would be audio-recorded. (January/February).
- Have an on-site focus group with a small number of teachers (6-8). This would be audio-recorded. (January/February).
- Invite volunteers from the focus groups to discussion forums which would enable them to expand on themes arising from the focus groups. (February onwards).

Further data may be sought through individual interviews and online forums although I aim to be sensitive to what is reasonable to do in terms of the participants' time commitments and capacity to support the research. Further data will only be collected if it significantly helps guide the research.

I understand the need to get full permission to survey, interview and report on participants, as well as to maintain participant anonymity and that of the school in all communications, reports and publications.

Yours sincerely,



Éanna O'Boyle,

EdD student at University of Bath, UK
Student number: 079093444.

# **Appendix F:** Letter to parents seeking consent

**Permission Letter for Creativity Research at** [redacted]

7 December 2015

Dear parents and guardians of Grades 9 students at [redacted],

My name is Éanna O'Boyle and I have received approval from the [redacted], to conduct educational research at the school as partial fulfillment for my Doctorate in Education at the University of Bath, UK (http://www.bath.ac.uk). I write this letter seeking your consent or permission for your child to be part of this research project.

The research studies the perceptions of Grades 9 students and their teachers of what creativity is and how it is fostered. The purpose of doing this research, apart from the aim of promoting creativity in schools, is to inform educators of the practices in classrooms that make young people perceive they are being creative. Going further, the purpose is to help develop approaches to fostering creativity that are shared and recognised by teachers and students.

I intend to use the methods outlined below. I also include a planned timeline.

1. A student online *questionnaire*:
   This would be an anonymous survey about creativity with the option in a final question of volunteering to be part of a *focus group* and thus surrendering anonymity. This final question would explain how I would choose participants in the focus group to ensure there was varied representation (eg of opinions and gender). [November/December 2015].
2. At least one semi-structured *focus group* with students that I will facilitate on site. The maximum allotted time for the focus group would be 1 hour. It would be audio-recorded and subsequently subscribed. [January/February 2015].

To explore concepts further, I may use the following:

3. Invite student volunteers from the focus groups to discussion forums. These would enable the students to expand on themes arising from them. [February/March 2016]
4. Conduct one-to-one interviews (probably through Skype) with students. These would aim to expand on any undeveloped themes arising from the questionnaires, focus groups and discussion forums. [March 2015]

I understand the need to get full permission to survey, interview and report on participants, as well as ensure participant anonymity and that of the school in all communications, reports and publications. When reporting, I will use fictitious names for all participants and for the school, which give no clues to their identities. I will not communicate to anyone in the [redacted] school community or elsewhere information that would link opinions or actions with a particular participant. Participation or non-participation in the research project will not affect your child's grades. Please note that even with your permission, your child may decide not to participate or discontinue at a later stage.

*If you give permission for your child to participate in this research project, can you please complete the following form below and return it to your child:*

**I have read the information above and I give consent for my child to participate in the research project.**

**Name of child:** _____

**Parent/Guardian Signature:** _____ **Date:** _____

**Print Name:** _____

# **Appendix G:** Letter from CEIS to parents

8 December 2015

Dear [redacted] Parents and Students,

In our mission statement we aim to "inspire our students to be confident, creative, and critical thinkers". Recently we were approached by Mr. Éanna Boyle, a doctorate student at the University of Bath, asking for our cooperation in his "research into students' perceptions of how creativity is fostered by teachers." This seemed a good opportunity to try to estimate our degree of success in fulfilling part of our mission so we agreed to cooperate with the research by inviting our ninth grade students to participate in Mr. Boyle's study. The research will involve an online questionnaire for G9 students and teachers, focus group interviews at [redacted] and perhaps, at later stage some individual interviews also at [redacted]. All student involvement will take place in school and under [redacted] teacher supervision.

Mr. Boyle is on a one year sabbatical after five years as the Head of [redacted] in [redacted], and he has been involved in teacher IB programmes since 2002.

Attached you will find a letter from Mr. O'Boyle describing his research request and a timeline for working with our school. As is mentioned in the letter, the survey is anonymous and confidential. If a student would like to participate in the focus group, he or she needs to indicate this at the end of the survey.

If you agree that your child may participate in the survey and, possibly, the focus groups and discussions, please sign and return the attached permission slip to your child's homeroom teacher by Friday 18 December 2015.

We are looking forward to learning more from Mr. O'Boyle about how best to support students in developing their creative thinking.

If you have any questions, please feel free to contact our Middle Years Programme Coordinator, [redacted] who is helping Mr.O'Boyle organize the data collection at [redacted]

Sincerely,

[redacted]

# **Appendix H:** Letter to teachers seeking consent

**Staff Consent- Creativity Research at**

10 December 2015

Dear teachers of ,

My name is Éanna O'Boyle and I have received approval from the Head of , to conduct educational research at your school as partial fulfillment for my Doctorate in Education at the University of Bath, UK (http://www.bath.ac.uk). I write this letter seeking your consent to be part of this research project.

The research studies the perceptions of students and their teachers of what creativity is and how it is fostered. The purpose of doing this research, apart from the aim of promoting creativity in schools, is to inform educators of the practices in classrooms that make young people perceive they are being creative. Going further, the purpose is to help develop approaches to fostering creativity that are shared and recognised by teachers and students.

I intend to use the methods outlined below. I also include a planned timeline.

1. A teacher online *questionnaire*:
   This would be an anonymous survey about creativity with the option in a final question of volunteering to be part of a *focus group* and thus surrendering your anonymity. This final question would explain how I would choose participants in the focus group to ensure there was varied representation (eg of opinions and gender). [January 2015].
2. A semi-structured *focus group* with teachers that I will facilitate on site. The maximum allotted time for the focus group would be 1 hour. It would be audio-recorded and subsequently subscribed. [January/February 2015].
3. Note that another online questionnaire will be completed by grade 9 students, and this would also be followed up with at least one focus group which I will facilitate on site.

To explore concepts further, I may use the following:

4. Invite student volunteers from the focus groups to discussion forums. These would enable the students to expand on themes arising from them. [February/March 2016]
5. Conduct one-to-one interviews (probably through Skype) with students and teachers. These would aim to expand on any undeveloped themes arising from the questionnaires, focus groups and discussion forums. [March 2015]

I understand the need to get full permission to survey, interview and report on participants, as well as ensure participant anonymity and that of the school in all communications, reports and publications. When reporting, I will use fictitious names for all participants and for the school, which give no clues to their identities. I will not communicate to anyone in the ISD school community or elsewhere information that would link opinions or actions with a particular participant.

If you give consent to your participation in this research project, can you please complete the following form below and sent it to eob22@bath.ac.uk. I sincerely hope you will be interested in participating in the project and, if so, I hope that you find it an enriching experience. Please note that if you agree to participate, you can decide to stop your participation at any stage thereafter.

- - - - - - - - - - - - - - - - - - - - -

**I have read the information above and I wish to participate in the research project.**

**Name:** _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

**(Digital) Signature:** **Date:**

# **Appendix I:** Adolescent online questionnaire

(converted to greyscale)

# Student Survey Creativity

## Page 1: Introduction

Please take a moment to read this important information before you start.

**My name is Éanna O'Boyle and I am completing my Doctorate in Education from the University of Bath (UK)**. As part of my Doctoral studies, I am researching students' and teachers' perceptions of creativity. More specifically, I want to know what grade 9 and grade 10 students and their teachers at [redacted] think creativity is and how it is encouraged at school. I think this research will help [redacted] and other schools to understand better how creativity is developed in young people.

**The first step in my research is to invite students to complete this questionnaire**. The second step is to invite a smaller number of students to a group interview later in the school year.

**This is an anonymous survey meaning that you do not have to give your name**. After asking you some factual questions (eg where you are from), I then ask you questions related to creativity. You do not have to answer all questions but I hope you do. The survey will probably take about 30 minutes.

**At the end of the survey, I ask if you are interested in being part of a group interview** with other students. If you are interested, then I have asked you to include your name at the end.

**Your responses in this questionnaire are confidential**. This means that I will not share information that would link a response to a particular student. When I write about this research, I will not use your real names and I will not even mention the name of the school.

Once again, **I am very grateful** that you have volunteered to complete this questionnaire. It is my hope that your responses will help us understand better how to teach for creativity in schools.

## Page 2: One final thing!

I want to know what you think. So write as much as you need to.

There are no right or wrong answers.

As long as you communicate clearly, I am not concerned about spelling or sentence structure.

## Page 3: Personal details

The following questions ask about your details.

*1.* I am ✱ *Required*

- ◯ Female
- ◯ Male

*2.* I have been at [redacted] since the school year ✱ *Required*

- ◯ 2015/16
- ◯ 2014/15
- ◯ 2013/14
- ◯ 2012/13
- ◯ 2011/12
- ◯ 2010/11
- ◯ 2009/10 or earlier

*3.* I am from (I am a passport holder of): *Optional*

*3.a.* If you selected Other, please specify: *Optional*

*3.b.* Select second country if you have dual nationality (in other words, if you have a passport from another country).

## Page 4: Creativity?

These questions ask you about the word 'CREATIVITY'.

*4.* People have different opinions of what creativity is. What words or phrases do you associate with CREATIVITY? You can list as many as you want.

*5.* Now, try to come up with your own definition of creativity?

## Page 5: Think of a time.

I want you to think of a time at [redacted] this school year **2015-16** when you felt creative. It could be when you were in a MYP subject class, a CAS or other school activity, or a special school event.

*6.* **What class or activity** was it?

*7.* Describe what you were **doing** that made you feel creative? It will help if you give a detailed description.

*8.* Describe in as much detail as possible how the **teacher/supervisor** made you feel creative? (For example, what did the teacher say, do or give you to help you feel creative?)

*9.* Describe briefly another time when you felt you were creative at [redacted].

## Page 6: Teaching and Learning for Creativity

**The following questions are more general and ask you how teachers and activities encourage creativity. It will help if you can be as specific as you can and it will help if you give examples.**

*10.* What kind of things do teachers **say** to encourage you to be creative?

*11.* What do teachers **do** to encourage you to be creative?

*12.* How do teachers **organise their classroom** to encourage you to be creative?

*13.* What type of class assignments and activities encourage you to be creative?

*14.* What type of 'homework' assignments encourage you to be creative?

*15.* What are the **characteristics and attitudes** of teachers who encourage you to be creative?

*16.* Describe how your creativity is encouraged at [redacted]?

## Page 7: Not Being Creative

**The following questions ask you about teachers and activities that you feel do not encourage creativity.**

*17.* What are the characteristics and attitudes of teachers who **do not** encourage students to be creative?

*18.* What are the characteristics of classrooms which do not encourage creativity?

## Page 8: Learning to be creative - your beliefs.

**The following questions ask you about your beliefs in creativity.**

*19.* Can you learn to be creative?

*20.* Can everyone be creative? If not, who can be?

*21.* To what extent is it possible for a teacher to develop your creativity?

*22.* What could teachers do to help develop your creativity?

## Page 9: Anything else.

*23.* I may not have asked the best questions. Write here about anything else concerning creativity at .

## Page 10: And finally...

**I will be meeting with at least one small group of 6-10 students to discuss the topic of creativity further.**

If you are interested in being a member of this group of students, please indicate this below and give your name and contact information.

I will be selecting students who have different personal backgrounds (eg male/female) and who have different opinions on the topic of creativity.

Like this questionnaire, these group interviews are confidential in nature. I will not tell anyone, either verbally or in writing, who said what after these interviews take place. I may quote what students say but I will not state who said it.

*24.* Indicate your interest below to be part of a group of students who I would interview at a later date. ✱ *Required*

- ◯ I would like to be part of the student group.
- ◯ I would NOT like to be part of the student group.
- ◯ I am unsure if I want to be part of the student group.

*24.a.* If you are interested in being part of the student interview group, please give your name below and email address.

## Page 11: Thank you

Thank you very much for volunteering to share your views with me. I am very grateful.

My email is eob22@bath.ac.uk if you think of anything else afterwards.

# **Appendix J:** Teacher online questionnaire

(converted to greyscale)

# Teacher Survey Creativity

## Page 1: Introduction

Please take a moment to read this important information before you start.

**My name is Éanna O'Boyle and I am completing my Doctorate in Education from the University of Bath (UK)**. As part of my Doctoral studies, I am researching students' and teachers' perceptions of creativity. More specifically, I want to know what grade 9 and grade 10 students and their teachers at [redacted] think creativity is and how it is encouraged at school. I think this research will help [redacted] and other schools to understand better the development of creativity in young people.

**I am inviting teachers of grades 9 and 10 to complete this questionnaire**. The second step is to invite a smaller number of teachers to a group interview later in the school year.

**This is an anonymous survey meaning that you do not have to give your name**. After asking you some factual questions (eg your gender), I then ask you questions related to creativity. You do not have to answer all questions but I hope you do. The survey will probably take about 40 minutes.

**At the end of the survey, I ask if you are interested in being part of a group interview** with other teachers. If you are interested, or potentially interested, then I have asked you to include your name at the end.

**Your responses in this questionnaire are confidential**. This means that I will not share information that would link a response to a particular teacher. When I write about this research, I will not use your real names and I will not even mention the name of the school.

Once again, **I am very grateful** that you have volunteered to complete this questionnaire. It is my hope that your responses will help us understand better the topic of creativity in schools.

## Page 2: One final thing!

I want to know what you think. So write as much as you need to.

Please note that I am also giving a questionnaire to students and will be conducting group interviews with them.

## Page 3: Personal details

The following questions ask about your details.

1. I am ✱ *Required*

- ○ Female
- ○ Male

2. I have been at _____ since the school year ✱ *Required*

- ○ 2015/16
- ○ 2014/15
- ○ 2013/14
- ○ 2012/13 or before

## Page 4: Creativity?

These questions ask you about the word 'CREATIVITY'.

3. People have different opinions of what creativity is. What words or phrases do you associate with CREATIVITY? You can list as many as you want.

4. Now, try to come up with your own definition of creativity?

## Page 5: Think of a time.

**I want you to think of a time at this school year 2015-16 when you felt students were creative. It could be in a MYP subject class, a CAS or other school activity, or a special school event.**

5. **What class or activity** was it?

6. What were the students **doing**? It will help if you give a detailed description.

7. Describe how **you (**or anyone else) encouraged the students be creative in this activity? (For example, what did you say, do or give to help them be creative?)

8. Give specific examples where a student showed creativity in this activity. You can also give examples of students showing creativity in another activity.

## Page 6: Teaching and Learning for Creativity.

**The following questions are more general and ask you how teachers and activities can encourage creativity. It will help if you can be as specific as you can and it will help if you give examples.**

*9.* What kind of things can teachers **say** to encourage students to be creative?

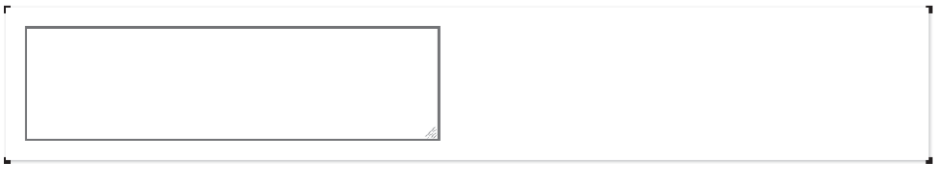
*10.* What can teachers **do** to encourage students to be creative?

*11.* How can teachers **organise their classroom** to encourage students to be creative?

12. What type of class assignments and activities encourage students to be creative?

13. What type of 'homework' assignments encourage students to be creative?

14. What are the **characteristics and attitudes** of teachers who encourage students to be creative?



15. Describe how you think student creativity is encouraged at [redacted]?

## Page 7: Not Being Creative

**The following questions ask you about teachers and activities that you feel discourage creativity.**

*16.* What are the characteristics and attitudes of teachers who **do not** encourage students to be creative?

*17.* What are the characteristics of classrooms which do not encourage creativity?

*18.* What are the characteristics of schools which do not encourage creativity?

## Page 8: Learning to be creative - your beliefs.

**The following questions ask you about your beliefs in creativity.**

*19.* Can you learn to be creative?

*20.* Can everyone be creative? If not, who can be?

*21.* To what extent is it possible for a teacher to develop student creativity?

## Page 9: Anything else.

*22.* I may not have asked the best questions. Write here about anything else concerning creativity at .

## Page 10: And finally...

**I will be meeting with at least one small group of 6-8 teachers to discuss the topic of creativity further.**

If you are interested in being a member of this group of teachers, please indicate this below and give your name and contact information.

I will be selecting teachers who have different personal backgrounds (eg male/female) and who have different opinions on the topic of creativity.

Like this questionnaire, these group interviews are confidential in nature. I will not tell anyone, either verbally or in writing, who said what after these interviews take place. I may quote what teachers say but I will not state who said it or give clues to who said it.

*23.* Indicate your interest below to be part of a group of teachers who I would interview at a later date. ✱ *Required*

- ○ I would like to be part of the teacher group.
- ○ I would NOT like to be part of the teacher group.
- ○ I am unsure if I want to be part of the teacher group.

*23.a.* If you are interested in being part of the teacher interview group, please give your name below and email address.

## Page 11: Thank you

Thank you very much for volunteering to share your views with me. I am very grateful.

My email is eob22@bath.ac.uk if you think of anything else afterwards.

## **Appendix K:** Pilot adolescent online questionnaire

(converted to greyscale)

# Pilot Student Survey Creativity Copy

## Page 1: Introduction

Please take a moment to read this important information before you start.

**My name is Éanna O'Boyle and I am completing my Doctorate in Education from the University of Bath (UK)**. As part of my Doctoral studies, I am researching students' and teachers' perceptions of creativity. More specifically, I want to know what MYP4/MYP5 students and MYP4/MYP5 teachers think creativity is and how it is encouraged at school. I think this research will help schools to understand better how creativity is developed in young people.

**The first step in my research is to invite students to complete this questionnaire**. The second step is to invite a smaller number of students to a group interview later in the school year.

**This is an anonymous survey meaning that you do not have to give your name**. After asking you some factual questions (eg what class you are in), I then ask you questions related to creativity. You do not have to answer all questions but I hope you do. The survey will probably take about 30 minutes.

**At the end of the survey, I ask if you are interested in being part of a group interview** with other students. If you are interested, then I have asked you to include your name at the end.

**Your responses in this questionnaire are confidential**. This means that I will not share information that would link a response to a particular student. When I write about this research, I will not use your real names and I will not even mention the name of the school.

Once again, **I am very grateful** that you have volunteered to complete this questionnaire. It is my hope that your responses will help us understand better how to teach for creativity in schools.

## Page 2: One final thing!

I want to know what you think. So write as much as you need to.

There are no right or wrong answers.

As long as you communicate clearly, I am not concerned about spelling or sentence structure.

## Page 3: Page 2

The following questions ask about your details.

1. I am in class ✱ *Required*

- ○ MYP4
- ○ MYP5

2. I am ✱ *Required*

- ○ Female
- ○ Male

3. I have been at _____ since the school year ✱ *Required*

- ○ 2015/16
- ○ 2014/15
- ○ 2013/14
- ○ 2012/13
- ○ 2011/12
- ○ 2010/11
- ○ 2009/10 or earlier

4. I am from (I am a passport holder of): *Optional*

4.a. If you selected Other, please specify: *Optional*

4.b. Select second country if you have dual nationality (in other words, if you have a passport from another country).

## Page 4: Page 3

These questions ask you about the word 'CREATIVITY'.

5. People have different opinions of what creativity is. What words or phrases do you associate with CREATIVITY? You can list as many as you want.

6. Now, try to come up with your own definition of creativity?

## Page 5: Think of a time...

I want you to think of a time at this school year **2015-16** when you felt creative. It could be when you were in a MYP subject class, a CAS or other school activity, or a special school event.

7. **What class or activity** was it?

8. Describe what were you **doing** that made you feel creative?

9. Describe how the **teacher/supervisor** made you feel creative? (For example, what did the teacher say, do or give you to help you feel creative?)

## Page 6: Teaching and Learning for Creativity

**The following questions are more general and ask you how teachers and activities encourage creativity. It will help if you can be as specific as you can and it will help if you give examples.**

*10.* What kind of things do teachers **say** to encourage you to be creative?

*11.* What do teachers **do** to encourage you to be creative?

*12.* How do teachers **organise their classroom** to encourage you to be creative?

*13.* What type of class assignments and activities encourage you to be creative?

14. What type of 'homework' assignments encourage you to be creative?

15. What are the **characteristics and attitudes** of teachers who encourage you to be creative?

16. Describe how creativity is encouraged at ?

## Page 7: Not Being Creative

**The following questions ask you about teachers and activities that you feel do not encourage creativity.**

*17.* What are the characteristics and attitudes of teachers who **do not** encourage students to be creative?

*18.* What are the characteristics of classrooms which do not encourage creativity?

## Page 8: Your Beliefs about Creativity

**The following questions ask you about your beliefs in creativity.**

*19.* Can you learn to be creative?

*20.* Can everyone be creative? If not, who can be?

*21.* To what extent is it possible for a teacher to develop your creativity?

*22.* What could teachers do to help develop your creativity?

## Page 9: Anything else.

*23.* I may not have asked the best questions. Write here about anything else concerning creativity at [redacted] that you think might be important.

## Page 10: Feedback on this survey

*24.* How long did it take to complete the survey?

- ○ 10 minutes or less
- ○ 20 minutes
- ○ 30 minutes
- ○ 40 minutes
- ○ 50 minutes
- ○ 60 minutes (1 hour)
- ○ 1 hour 20 minutes
- ○ More than 1 hour 20 minutes

*25.* Please write down below any comments about the survey. For example, was it clear? Was it organised? Was it easy to follow? Was it enjoyable? Is there anything you would add or remove?

## Page 11: Thank you

Thank you very much for getting this far.

If you have any further comments, please email me at eob22@bath.ac.uk.

**Appendix L:** Pilot teacher online questionnaire

(converted to greyscale)

# Pilot Teacher Survey Creativity Copy

## Page 1: Introduction

Please take a moment to read this important information before you start.

**My name is Éanna O'Boyle and I am completing my Doctorate in Education from the University of Bath (UK)**. As part of my Doctoral studies, I am researching students' and teachers' perceptions of creativity. More specifically, I want to know what MYP4/MYP5 students and MYP4/MYP5 teachers at [redacted] think creativity is and how it is encouraged at school. I think this research will help schools to understand better how creativity is developed in young people.

**I am inviting teachers of classes MYP4 and MYP5 to complete this questionnaire**. The second step is to invite a smaller number of teachers to a group interview later in the school year.

**This is an anonymous survey meaning that you do not have to give your name**. After asking you some factual questions (eg what class you are in), I then ask you questions related to creativity. You do not have to answer all questions but I hope you do. The survey will probably take about 30 minutes.

**At the end of the survey, I ask if you are interested in being part of a group interview** with other teachers. If you are interested, then I have asked you to include your name at the end.

**Your responses in this questionnaire are confidential**. This means that I will not share information that would link a response to a particular teacher. When I write about this research, I will not use your real names and I will not even mention the name of the school.

Once again, **I am very grateful** that you have volunteered to complete this questionnaire. It is my hope that your responses will help us understand better how to teach for creativity in schools.

## Page 2: One final thing!

I want to know what you think. So write as much as you need to.

Please note that I am also giving a questionnaire to students and will be conducting group interviews with them.

# Page 3: Page 2

The following questions ask about your details.

1. I teach, supervise or meet with students in class(es) * *Required*

- ○ M4 and M5
- ○ M4 only
- ○ M5 only

2. I am * *Required*

- ○ Female
- ○ Male

3. I have been at ____ since the school year * *Required*

- ○ 2015/16
- ○ 2014/15
- ○ 2013/14
- ○ 2012/13 or before

## Page 4: Page 3

These questions ask you about the word 'CREATIVITY'.

4. People have different opinions of what creativity is. What words or phrases do you associate with CREATIVITY? You can list as many as you want.

5. Now, try to come up with your own definition of creativity?

## Page 5: Think of a time...

**I want you to think of a time at  this school year 2015-16 when you felt students were creative. It could be when you were in a MYP subject class, a CAS or other school activity, or a special school event.**

6. **What class or activity** was it?

7. What were the students **doing**?

8. Describe how **you** encouraged the students be creative? (For example, what did you say, do or give to help them be creative?)

## Page 6: Teaching and Learning for Creativity

**The following questions are more general and ask you how teachers and activities encourage creativity. It will help if you can be as specific as you can and it will help if you give examples.**

*9.* What kind of things do teachers **say** to encourage students to be creative?

*10.* What do teachers **do** to encourage students to be creative?

*11.* How do teachers **organise their classroom** to encourage students to be creative?

12. What type of class assignments and activities encourage students to be creative?

13. What type of 'homework' assignments encourage students to be creative?

14. What are the **characteristics and attitudes** of teachers who encourage students to be creative?

15. Describe how you think student creativity is encouraged at ?

## Page 7: Not Being Creative

**The following questions ask you about teachers and activities that you feel do not encourage creativity.**

*16.* What are the characteristics and attitudes of teachers who **do not** encourage students to be creative?

*17.* What are the characteristics of classrooms which do not encourage creativity?

*18.* What are the characteristics of schools which do not encourage creativity?

## Page 8: Your Beliefs about Creativity

**The following questions ask you about your beliefs in creativity.**

19. Can you learn to be creative?

20. Can everyone be creative? If not, who can be?

21. To what extent is it possible for a teacher to develop student creativity?

22. What could teachers do to help develop student creativity?

## Page 9: Anything else.

23. I may not have asked the best questions. Write here about anything else concerning creativity at _____ that you think might be important.

## Page 10: And finally...

**I will be meeting with at least one small group of 6-8 teachers to discuss the topic of creativity further.**

If you are interested in being a member of this group of teachers, please indicate this below and give your name and contact information.

I will be selecting teachers who have different personal backgrounds (eg male/female) and who have different opinions on the topic of creativity.

Like this questionnaire, these group interviews are confidential in nature. I wil not tell anyone, either verbally or in writing, who said what after these interviews take place. I may quote what teachers say but I will not state who said it or give clues to who said it.

*24.* Indicate your interest below to be part of a group of teachers who I would interview at a later date. ✱ *Required*

- ○ I would like to be part of the teacher group.
- ○ I would NOT like to be part of the teacher group.
- ○ I am unsure if I want to be part of the teacher group.

*24.a.* If you are interested in being part of the student interview group, please give your name below and email address.

## Page 11: Feedback on pilot questionnaire

*25.* Please write down below any comments about the survey. For example, was it clear? How long did it take? Was it organised? Was it easy to follow? Was it enjoyable? Is there anything you would add or remove?

## Page 12: Thank you

Thank you very much for getting this far.

If you have any comments, please email me at eob22@bath.ac.uk.

## **Appendix M:** Example of activity during FGA2

(converted to greyscale)

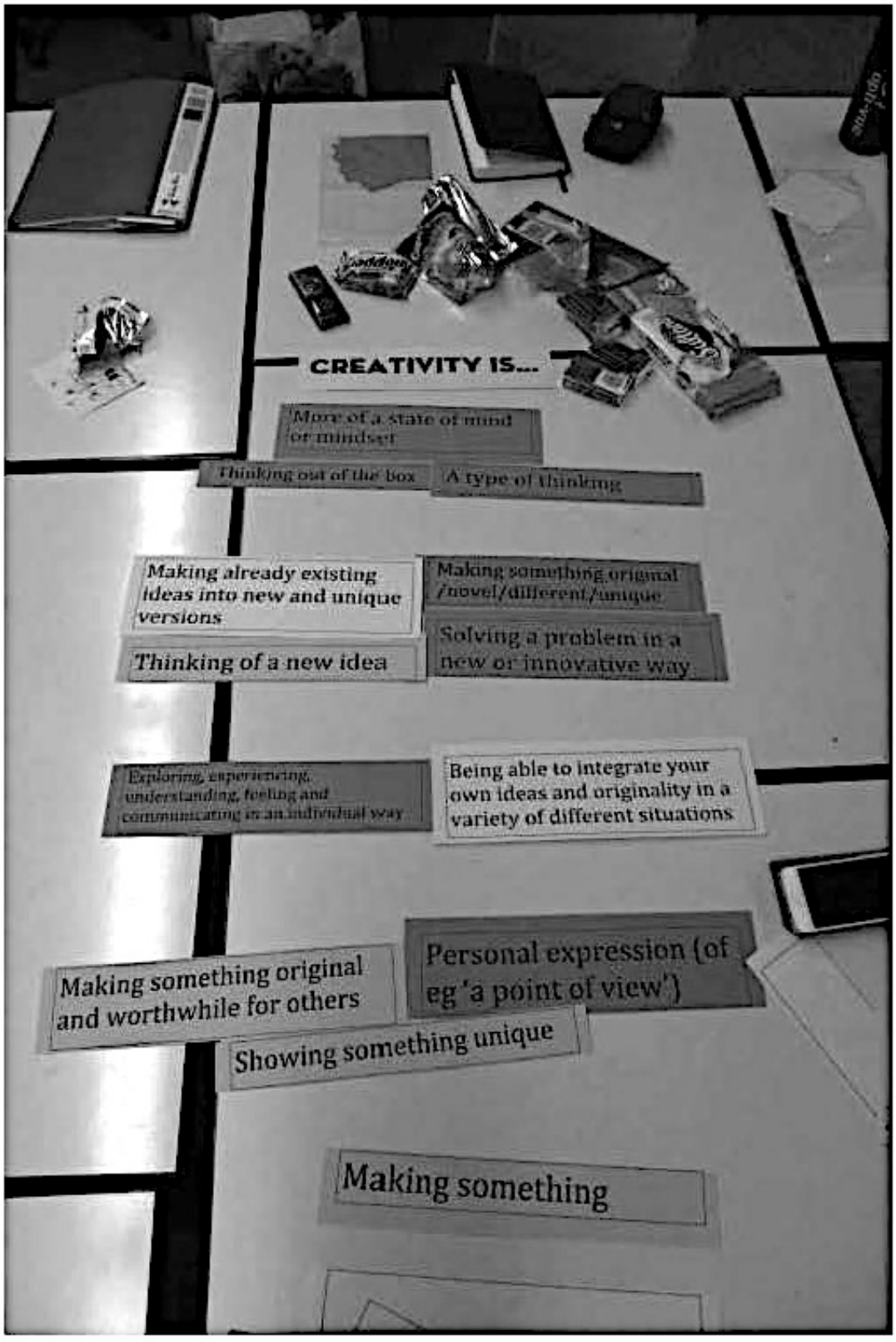
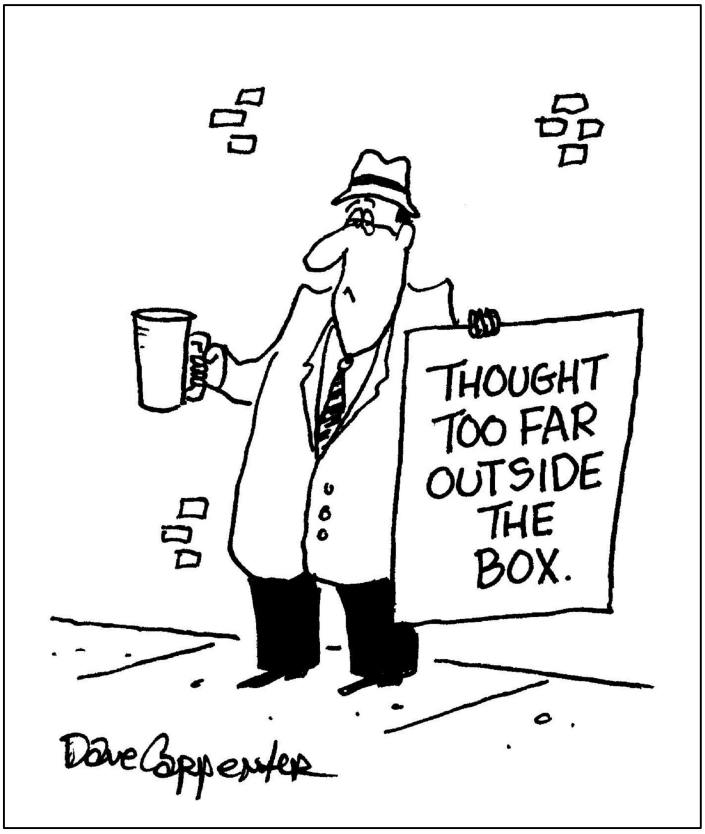



Image by author

## **Appendix N:** Example of cartoon




https://www.cartoonstock.com/cartoonview.asp?catref=dcrn1221 (purchased online)

# **Appendix O:** Letter to adolescents seeking consent

**Focus Group Permission Letter for Creativity Research at** [redacted]

8 March 2016

Dear students of Grades 9 and 10 students at [redacted]

My name is Éanna O'Boyle and I have received approval from the [redacted] to conduct educational research at the school as partial fulfillment for my Doctorate in Education at the University of Bath, UK (http://www.bath.ac.uk). I write this letter seeking your consent or permission for you to be part of the focus group today as part of the research project.

The research studies the perceptions of Grades 9 and 10 students and their teachers of what creativity is and how it is fostered. The purpose of doing this research, apart from the aim of promoting creativity in schools, is to inform educators of the practices in classrooms that make young people perceive they are being creative. Going further, the purpose is to help develop approaches to fostering creativity that are shared and recognised by teachers and students.

I understand the need to get full permission to survey, interview and report on participants, as well as ensure participant anonymity and that of the school in all communications, reports and publications. When reporting, I will use fictitious names for all participants and for the school, which give no clues to their identities. I will not communicate to anyone in the [redacted] school community or elsewhere information that would link opinions or actions with a particular participant. Participation or non-participation in the research project will not affect a student's grades.

*If you give permission to participate in this research project, can you please complete the following form below:*

**I have read the information above and I give consent to participate in the research project.**

**Name of student:** [redacted]

**Date:** [redacted]

**Print Name:** [redacted]

# **Appendix P:** Example of transcribed interview (FGA2)

[00:00:00.00] EO: Again, thank you for coming. Two things I want to say. First of all, I really appreciate you're here, sharing your ideas because it helps me finish my doctorate! So for selfish reasons, I really appreciate it. More importantly for you, I'm also very passionate about telling the school what I found out and other schools like [CEIS]. So, that is very important to me. Again, and I know I say this a lot but I'll say it once again, I take great care to make sure what you say is confidential. By that I mean, I will do all I can to make sure no one can identify who said what. I will report on what people said, but I'm trying to avoid as much as possible, that people can identify who you are. So, in the research I will call you a different name, I'm not going to call [pseudonym is Ashe] another [nationality] name because then it is so obvious who you are. The second thing I want to say is that I'm not coming here to prove anything, I'm not coming here to make a judgment such as [CEIS] is really encouraging creativity a lot or it's not doing it a lot. I'm not here to make a judgment about the teaching for creativity at [CEIS]. In fact, what I think about creativity is irrelevant to the research, or I am trying to make it irrelevant to the research. The only thing I'm interested in is what you think. So, it makes no difference whether I agree or disagree with you.

José: Our opinions?

[00:02:10.08] EO: Yes, that's all I care about. Whether I agree or disagree is not important in the research at all. So just that you know that. You're not trying to please me because there is nothing to please! I don't care what you say in the sense that I don't feel I have to agree or disagree. Ok. So we'll start, we have got a slightly longer session today. I am going to start you off with a cartoon. I want you to look at the cartoon and I want you to let everyone else know, what came to your mind, in terms of creativity at the school, when you looked at the cartoon.

[00:04:26.27] Rory: I think maybe this is supposed to be funny because when people think outside the box and think with their mind, maybe other people think they're weird or strange. it's made to let others see he's no money, he's asking money for charity because it's saying he thought too far outside the box, maybe too much by itself and [inaudible].

[00:04:54.19] José: I think this man was put down by people because he thought obviously too much outside of the box and his ideas were too unrealistic to some other people. So yes, for that reason, he has just been put down by everyone and he has nothing.

[00:05:30.00] EO: Does that ever happen here in the school where you or other people are seen to be thinking too much out of the box?

[00:05:51.04] Inma: I think it depends. There are always certain projects where there is a clear structure that people want, or a different format like if that's an essay or a worksheet or something like that. I think we all sort of know when we're allowed to have that. It's that creative freedom and then we'll take it but if not, then I think there's a mix of things, either that you should be creative or that there's a set thing they want you to do.

[00:06:12.28] Rory: I think if you stay on task, there is no limit to thinking outside the box. You can do whatever you want as long as it stays on task. So, you can do it in your own way.

[00:06:24.21] EO: So, if I understand right, thinking outside the box means not following the guidelines you have been given.

[00:06:35.12] Rory: It's not really that you're not following the guidelines, it's thinking differently from how maybe most of the people would do.

[00:06:47.19] Toni: I think often also teachers give examples of how you could for example a presentation. And I feel like thinking out of the box is just doing something different or something unique from those examples which they have given in terms of presentations.

[00:07:11.09] EO: So when the teacher gives examples, like exemplars, that you feel restricted, is that what you mean?

[00:07:20.27] Rory: No. It's like for the teacher that's one way of doing it, maybe it's a person's way to do that but you can have your own way to do that. Maybe the structure you said of the presentation, there's a final structure but then maybe someone else took it and made it different. It's still a presentation, It's still on task but it's different. So it fell outside the box.

[00:07:48.00] EO: Do you think other students, or even teachers, think that presentations, to give an example, PowerPoint presentations you mean?

[00:08:02.23] Toni: Well no, but generally speaking in front of the class.

[00:08:10.12] EO: Do you think students are being creative when they present?

[00:08:17.25] Inma: no just that presentations are the classic example of where you're often allowed to do whatever you want.

[00:08:20.06] Toni & Rory: Yep

[00:08:20.06] Inma: An area we recently had a presentation where we were told to do things in whatever way we want.

[00:08:27.27] Toni: But we were restricted. We weren't allowed to use a PowerPoint presentation or we weren't allowed to use any electronic visuals.

[00:08:33.01] José: But I don't think that was about prevention. That was more encouragement of creativity because usually when you have a presentation, the first thing that comes to your mind is a PowerPoint presentation and you like go from slide to slide speaking to the class but I think in this one they forbid it so that we can be more creative and that we could use like posters, speech, acting out and stuff like that.

[00:08:57.25] Toni: That also made it more interactive.

[00:09:07.15] EO: Did it help?

[00:09:09.22] Inma: Yea. I think generally it was a bit more creative than we would have been as we were forced not to do our usual.

[00:09:19.02] Rory: Because maybe most of the time when you think about a presentation, people would like create a presentation, then go internet, look for some information, maybe copy and paste this and that, and then when you are presenting, you just turn around a lot of times, you see what you wrote.

[00:09:36.27] EO: On a PowerPoint, you mean?

[00:09:36.17] Rory: Yes, maybe see what you wrote on the PowerPoint and you just read it out. It's not really presenting in your way. It's just reading something so this time they encouraged you by forcing you not to do that, to do something new, something else.

[00:09:52.13] EO: How do you feel, when you're looking at or listening to a PowerPoint presentation, in general how do you find them - interesting, creative, boring, varied?

[00:10:06.15] Toni: I think it really depends on what it is. I think that some, I definitely have seen some very interesting PowerPoint presentations especially because of the way they were presenting. I know very much, just as an example now, for English, that was the example we weren't allowed to use a PowerPoint presentation, but we've also had a time where we were doing a presentation on the book and then sometime in that 5-minute presentation, we had to step out of the presenter character and step into a character out of the book, and act out some lines from there. And everybody kind of did that in a different way.

[00:10:52.07] Inma: yea, I think it depends on how it's done because you can do things. Just because it's a presentation, doesn't mean it will be boring or interesting, and there are always different ways of doing it. So, yea, there's been some boring presentations but also really interesting presentations.

[00:11:08.07] Rory: I think if a person does presentation, he's putting in as less effort as he can to do it quick and without really caring about it, then the results you can really say it's boring and it's not interactive, and the audience listening to it doesn't really enjoy watching it, it's just something else, it's just like reading something but it's not like presenting to the people in front of you what you know.

[00:11:36.05] EO: Do you find that the presentations that you find interesting, are they the ones that are mostly creative?

[00:11:44.03] Rory: Yea.

[00:11:45.14] José: Yea. I think presentations that really stand out are the ones that do something different. Like, instead of like the classic presentation, they'll add in a bit of extra, I don't know, acting or something like that, and you'll really be amazed by it.

[00:12:04.27] Rory: When they add something of their self, like you can see actually who did it, and why.

[00:12:10.14] Inma: Something personal.

[00:12:11.23] Rory: Yea.

[00:12:12.18] EO: Does that happen a lot?

[00:12:15.21] Inma: I think it depends who it's by, like I'd say in a standard school presentation, no, but I mean if you look at maybe TED talks or something, I think that's something that's generally very interesting in that it's a presentation.

[00:12:30.26] Rory: It depends also if you like what you're doing. If you're interested in what you're doing, you'll will put more effort and the others will see that you're interested in it, and the others will enjoy looking at it. But if you're not really, you don't like what you're doing, it's clear from outside.

[00:12:51.04] José: I think when you don't really know what you're doing, when you don't really understand the topic, that's when you start to procrastinate and maybe say 'oh yea, I'll do it later,' or 'it doesn't really interest me or whatever', and that's when you put the least amount of effort. But when you really understand the topic, then it's really easy to find points to put into the presentation, or what to present, how to present it, and from then on you can do something creative and maybe add a few aspects to it.

[00:13:16.29] EO: What do you think of José's thoughts on that, like if you know the subject very well, that it's easier to be creative? José, am I correct?

[00:13:40.22] José: Yea, if you understand what you're doing, then you're able to take a step further rather than to concentrate on what to put in it. But from there, if that's easier to do, then you can spend more time on extending it and making something personal as you [Inma] said or creative.

[00:13:57.00] Rory: Yea, you can put your effort.

[00:13:57.10] EO: I'm sorry, when you say 'understand what you're doing', understand what?

[00:14:01.21] José: Understand the topic.

[00:14:04.21] Toni: And it can also be if you're more engaged with it or more interested in the topic, that's easier as well.

[00:14:14.24] EO: Easier to?

[00:14:14.24] Toni: Easier to first of all do research and like you really do put effort inside of it just because if you like the topic, you can also want to learn about it.

[00:14:30.13] EO: So, what's the teacher's role in that? Sorry Inma, you were going to say?

[00:14:33.19] Inma: No, I was just going to say that despite, even if you like it or not, or if you don't understand much about it, I think that despite that, you can still do a creative or interesting presentation that people connect with or enjoy watching. Maybe it's harder to do something that people would really like if you don't know what you're presenting on but I think you could still present in a maybe slightly different way that maybe would even help other people understand it. That you don't have to be an expert to give an interesting presentation.

[00:15:35.10] EO: I found it very interesting how different people defined creativity. They define it in different ways. And so I am just wondering if, as a group, it's possible for you to come up with what you think creativity is. And here is how I want you to do this. I've got a list of statements here, for the most part made by students, about what they thought creativity is. So there's a variety of statements here, and what I want you to do is limit the number of papers to as few as possible to encompass everything that creativity is. Is that clear?

[00:16:29.16] Toni, Rory: Yea.

[00:16:32.24] EO: So here they are. Some you might think, that definitely had to stay, you might find another one 'oh, that's even better said' and you might want to replace it. You might look at something and say 'that doesn't really get to the core of what creativity is and so I'm going to leave it out'. And try to have as few pieces of paper as you can? Here are some blanks just in case you want to include your own.

[00:17:16.04] Rory: Should we just read through everything?

[00:17:16.04] Inma, José: Yea.

[00:17:18.09] Inma: Should we use a yes, no, maybe pile?

[00:17:21.15] Inma: "Making something original and worthwhile for others".

[00:17:25.05] Inma: I don't know.

[00:17:26.12] José: Maybe.

[00:17:26.12] Rory: Maybe for now.

[00:17:29.10] José: Are we going to do a yes, no, maybe?

[00:17:31.04] Inma: Yea, OK. Should that be 'maybe' then?

[00:17:32.15] Rory: And then we'll see what we do. And "thinking of a new idea"?

[00:17:38.28] Rory: It's a yes but not.

[00:17:39.12] José: I think 'maybe'.

[00:17:40.09] Inma: Yea.

[00:17:42.28] José: Because it doesn't really define it.

[00:17:52.26] Inma: "Exploring, experiencing, understanding, feeling and communicating in an individual way"?

[00:17:52.26] Inma: I'd say that's a 'yes'.

[00:17:51.24] José: Yes, that's a yes.

[00:17:54.07] Rory: Yea.

[00:17:58.17] Rory: "Thinking outside the box"?

[00:18:02.10] Inma: That's not necessarily creative. Well, kind of.

[00:18:06.07] Rory: It is creative because you do a thing in a different way.

[00:18:06.02] José: It's between the 'maybe' and the 'yes'.

[00:18:07.22] Inma: Yea [laughs].

[00:18:13.17] Toni: Then it's hard to define 'what thinking out of the box' is.

[00:18:15.17] Rory: "Making something original/novel/different/unique"?

[00:18:18.23] Toni: Maybe?

[00:18:21.01] Inma: I'd say 'making something'. It's not necessarily making something original.

[00:18:25.11] José: Maybe under this one?

[00:18:26.16] Inma: Yea.

[00:18:36.01] José: Yea, definitely (to "Seeing the world in multiple and new perspectives").

[00:18:40.11] Inma: Oh, I'd say no to that.

[00:18:37.28] José: Really?

[00:18:38.01] Inma: Yea to "Seeing the world in multiple and new perspectives".

[00:18:41.06] Rory: It's not really being creative. It's like.

[00:18:43.16] Inma: I don't know. Actually.

[00:18:46.01] Rory: It's like seeing the world.

[00:18:46.13] Toni: I mean you can see the world in different ways but you're not really doing anything.

[00:18:51.12] Rory: You're not doing anything creative so you're just.

[00:18:53.28] José: But say you're thinking in your head and imagining that cupboard and it's walking, you know. That might be crazy.

[00:19:01.05] Inma: But is that creative?

[00:19:02.28] José: I don't know, like thinking outside the box?

[00:19:06.05] Toni: But I mean if you do something with it.

[00:19:09.12] Inma: Yes, that's what I mean by is thinking outside the box creative? I don't think it is because you could be like 'oh, yea well, em, this I'm going to use, I don't know.

[00:19:14.00] Rory: Here it's seeing things in different perspectives but you're not being creative while doing it.

[00:19:20.10] Inma: I think that's more looking like at a part of 'an event' (unclear?) and saying oh no, that's actually really good for that country because blah blah blah.

[00:19:25.24] Rory: It's maybe similar but not really creativity. Trying to give a definition of creativity: creativity is "seeing the world in multiple and new perspectives"? It doesn't really.

[00:19:40.03] Toni: I think that's like creativity for yourself but you're not really doing anything with that.

[00:19:45.22] José: I'd say it's a no. I was just thinking because this to me at the start, it felt like a child imagining another galaxy, seeing the world in new perspectives.

[00:20:02.13] Rory: That's having a really good imagination maybe.

[00:20:02.21] Inma: Yea

[00:20:03.24] Rory: But not creativity.

[00:20:05.01] José: It's thinking outside the box, but yea.

[00:20:05.23] Inma: But is that creative?

[00:20:07.25] Rory: It's a 'no'?

[00:20:11.19] Inma: We'll come back to it later.

[00:20:11.27] José: It's like a barely weak version of 'this' ("Thinking out of the box").

[00:20:13.12] Toni: Yep.

[00:20:14.00] José: But not really. So I think

[00:20:15.00] Toni: 'maybe'.

[00:20:15.16] Rory: Just take it out?

[00:20:13.25] José: Yea, to the side for now.

[00:20:22.28] Rory: "Personal Expression"?

[00:20:22.13] José: No.

[00:20:25.10] Toni: I don't think so.

[00:20:27.00] Inma: No because you could say I'm happy and it's not really creative, is it?

[00:20:30.08] Toni: Pretty low.

[00:20:35.21] Toni: "Being able to integrate your own ideas and originality in a variety of different situations"?

[00:20:38.22] Inma: No.

[00:20:40.13] José: No, that's like not thinking creatively, that's just expressing yourself.

[00:20:42.23] Inma: Well, I know that's like having a presentation and that's like the standard mould. I don't know. I think half-yes because "being able to integrate your own ideas and originality into a variety of situations".

[00:20:53.23] Rory: That's not really creativity.

[00:20:55.21] Toni: You have to.

[00:20:55.21] Inma: If you're saying an artist is creative maybe in art they are but their presentation might be boring. Does that mean they're not creative?

[00:21:10.08] José: Say that again?

[00:21:10.08] Inma: I feel that, "being able to integrate your own ideas and originality in a variety of different situations", that if you say the stereotypical artist is creative, they may not be able to give a creative presentation. Then this would exclude them from being creative because it refers to a variety of situations. And I think generally if you're creative, you might have a different mindset which would maybe lead you to think 'I'm going to do this presentation differently, I'm going to paint this differently, I'm going to present this upside down point of view, whatever.

[00:21:42.28] Rory: Not Being creative is not necessarily...

[00:21:46.15] Inma: It's not necessarily for everything.

[00:21:46.15] Rory: ... something that nobody maybe have done.

[00:21:50.09] Toni: I think each person is creative in their own way but you're not...

[00:21:52.24] José: Exactly. If you're creative, it doesn't mean you're creative in all aspects.

[00:21:56.04] Inma: Because we can't do everything. You might be more likely to be that.

[00:22:02.12] Toni: If you're creative for example now, with music, as a musician or as a singer, do not necessarily creative with like Art, then you're not really going to do your own album cover.

[00:22:12.23] Inma: And it could be maybe with Art because you do things differently but maybe not.

[00:22:17.03] José: You could be a songwriter, and write this really good song or album and then it has, I don't know, a billion views on youtube or something but at the same time you might lack skills when presenting or doing art or whatever.

[00:22:28.07] Rory: So should we put it somewhere here?

[00:22:33.22] Inma: I don't know, I think it's just like the 'variety of different situations', you have to know.

[00:22:36.03] José: Put it lower.

[00:22:38.16] Toni: Yep.

[00:22:40.06] Inma: Yea. Because if it was in a certain situation, then yea.

[00:22:44.10] José: "Making already existing ideas into new and unique versions".

[00:22:51.03] Rory: Yes, that's actually real.

[00:22:51.02] José: Creativity is not necessarily turning something into something better or more creative. I think it's just coming up.

[00:22:55.21] Inma: But it could be.

[00:22:56.22] José: It could be but it doesn't define it entirely.

[00:23:01.02] Inma: Yea, that isn't the way I'd explain.

[00:23:01.18] Rory: It's similar to this "Making something original, different and unique". It's kind of the same thing.

[00:23:05.16] José: No, this one is taking something and making it more creative. This one is making something from scratch.

[00:23:13.08] Toni: I think it's both though.

[00:23:16.08] Rory: It's talking about the same thing.

[00:23:16.02] José: Yea.

[00:23:18.28] Inma: Because you could say 'that presentation was creative, well then you've changed presentation, haven't you?

[00:23:22.13] Toni: Put them next to one another because I think that's something that should be combined.

[00:23:26.15] Inma and José: Yea.

[00:23:26.18] Rory: "A type of thinking"?

[00:23:28.24] José: Obviously. It's not very like, eh.

[00:23:25.24] Rory: It's how you think.

[00:23:38.26] José: A type of thinking.

[00:23:41.03] Rory: It's not really a type, it's a way.

[00:23:40.25] Inma: It's almost a mindset. I don't know.

[00:23:43.24] Toni: I mean that's like saying, that's like, yea.

[00:23:44.08] Inma: But do you, mmm?

[00:23:53.16] José: I think it isn't incorrect but it isn't completely correct either.

[00:23:56.15] Inma: Yea. But it's the same with all the other things there also.

[00:23:59.11] Toni: It doesn't give a full definition or tell somebody who doesn't know what creativity is what creativity is.

[00:24:14.23] Inma: But maybe if you're creative, you don't think. I'm not saying that in a negative way but if you are creative it's more of a feeling maybe.

[00:24:20.21] José: Yea, it's more like an instinct.

[00:24:22.11] Inma: Yea, exactly. Because let's say "I'm going to do this creatively', do you sit down and you don't break so it kind of comes to mind.

[00:24:28.17] Rory: Yea.

[00:24:28.17] Toni: Yea.

[00:24:28.17] Inma: But then it is kind of is a type of thinking because it came to your mind.

[00:24:36.06] José: It is. It is.

[00:24:37.21] Inma: I would say it is.

[00:24:38.20] José: Pretty high, I think. Not the highest.

[00:24:42.26] Inma: But it's not a type of thinking. What is it?

[00:24:42.26] Rory: Wait, wait I think this is still talking about the same thing here, making something original and different and new and thinking about new ideas. It's still talking about the same thing.

[00:24:55.06] José: I think that's pretty high up honestly.

[00:24:55.06] Inma: Yea.

[00:24:57.14] José: Because it is a type of thinking. It's like a mindset.

[00:25:02.18] Inma: Because even if you're not thinking about something, it's the way you.

[00:25:02.13] José: I think it's along the same line as this., not because they're the same thing, but because they

[00:25:05.17] Toni: It just reminds me when teachers say 'put your creative hat on'.

[00:25:11.25] José: Yea, I remember that in Primary. I was thinking of that. I had a hat, yea.

[00:25:14.20] Inma, Toni: [laughs].

[00:25:16.10] José: We had like a hat in the classroom, and it was like a clown hat.

[00:25:19.06] EO: And what do you think that means when that's said 'put on your thinking hat'? What does that mean to you, 'put on your creative hat'?

[00:25:28.16] José: We had thinking hat, I think, not creative hat. Thinking caps, we had individual ones.

[00:25:33.20] Inma: Yea, yea, thinking cap, yea we had that as well in Primary. I don't know, it's almost encouraging you to think of something.

[00:25:43.13] Rory: It's just basically a way of saying it, like think with your own head something new.

[00:25:50.26] José: I think the fact they say 'put on your thinking hat' is kind of contradictory because when we say it is a type of thinking, it comes as an instinct and naturally. But when you are telling someone to be creative that's not really going to help them out in any sort of way, I don't think.

[00:26:06.08] Inma: But when you're most creative in schools it's when teachers say do something creative. In that last English thing, if they had not said 'don't use technology, be creative', I would have gone the presentation. We were in the same group, we could have easily have had a few pictures and be like 'oh this is character 1, this is character 2'. And had I not been encouraged, I don't think I would have done. Same with the Drama at the beginning of the year when they were 'oh, do something creative, take us, act out this piece from Romeo and Juliet or something. Then we were creative then. But had they not said that, we would have probably done the classic, stay in the classroom.

[00:26:35.11] Rory: I think you are creative when people tell you to be creative when you want to. Then maybe they can tell you do that and then so you want to do that.

[00:26:46.13] Inma: Yea.

[00:26:47.19] Rory: What about this?

[00:26:50.01] Inma: "Solving a problem in a new or innovative way"?

[00:26:52.20] Inma: It's not necessarily solving a problem. But it could be.

[00:26:57.02] Rory: It still maybe, with all of this, it's like creating a new idea.

[00:27:00.07] Inma: It's kind of this mindset almost.

[00:27:02.15] Rory: All things that maybe being creative can relate to.

[00:27:08.13] José: I don't think that's very high because solving a problem is one thing but then what are you going to do with the problem. Solve it creatively? Like that's not going to help the solution. Unless.

[00:27:15.22] Rory: You solve a problem in your own way. You use what you know and how you are to solve the problem maybe. There's a classic solution to a problem and you find a new one using creativity, like thinking outside the box, finding a solution that nobody had thought before.

[00:27:36.29] José: I think it's even more about the process to get to the solution.

[00:27:36.06] Rory: It involves creativity.

[00:27:41.21] Inma: I think just your solution is creative.

[00:27:43.24] José: Is it?

[00:27:45.03] Toni: I think creativity is mainly like voicing your opinion on something.

[00:27:51.15] Inma: From this, it makes me think that creativity is kind of a mindset. Not a mindset, but just the way it comes and the way it's perceived by others. So it could be that the way you solved it is creative and in that case it would be but it's not always. It's like we say whether it's a painting, it's a presentation or problem, it could be anything. And if you're creative with one thing, you're not necessarily creative with another thing.

[00:28:12.14] Rory: I think it's like kind of the same with all these things, it's like a way of using creativity and how creativity can be.

[00:28:18.16] Inma: Thinking of a new idea could fit to anything. It could be a new idea in terms of a problem, in terms of a painting or a presentation.

[00:28:24.02] Rory: You use creativity to think of a new idea or make something original or to make something already existing into a unique way or to solve a problem in an innovative way.

[00:28:35.17] Inma: Because they all fit but then it's not just a problem, it's not just a painting, it's not just an idea. It could be anything.

[00:28:43.21] Toni: Yea.

[00:28:46.21] Rory: Just here with all these things and then.

[00:28:50.03] Toni: "More of a state of mind or mindset"?

[00:28:50.03] José: Yea, as we said.

[00:28:50.18] Inma: Yea, I would say.

[00:28:53.18] José: That's pretty high, that's in a type of thinking, in the same line, I think.

[00:28:55.07] Rory: I'm sure this is above all of this, "Exploring, experiencing, understanding, feeling and communicating in an individual way"?

[00:29:04.02] Inma: Because then it's not all of those. It's just something that comes naturally.

[00:29:08.11] José: I think we rated this too high.

[00:29:10.10] Rory: Yea, that is what I meant.

[00:29:11.15] Inma: Because that covers anything.

[00:29:11.19] José: Aha.

[00:29:12.16] Toni: Yea.

[00:29:13.26] Rory: Maybe it is here?

[00:29:14.10] Inma: Well not anything, but it covers a lot.

[00:29:14.29] José: No, yea. I even think that one should be lower down.

[00:29:19.13] Rory: Yea, that's why. This is probably one of the better.

[00:29:26.24] José: This is my personal opinion but I think this one should be below these two.

[00:29:29.29] Inma: Yea.

[00:29:29.29] Rory: Yea.

[00:29:31.18] José: Like that.

[00:29:31.18] Rory: This is general, a type of thinking and thinking outside the box and type of mind, state of mind, and there is how you can use it, and this is something like this.

[00:29:47.02] Toni: It's different for each person so.

[00:29:51.02] Rory: "Showing something unique"?

[00:29:54.11] Inma: See then again, it's not necessarily showing or it's not making. It could be anything.

[00:29:58.09] José: Yea.

[00:29:57.16] Rory: It's still talking about unique. It's not really a good one if you have to say what is creativity.

[00:30:03.22] José: It still makes sense but it doesn't define it entirely because you don't necessarily have to show something.

[00:30:04.19] Rory: But it doesn't define creativity. It's something that can happen.

[00:30:08.00] José: It's just a process. So I think, yes, so we're down the middle, I don't know.

[00:30:08.00] Inma: Yea.

[00:30:15.14] Rory: And then "Making something"?

[00:30:16.14] José: No.

[00:30:16.14] Rory: No.

[00:30:17.25] Inma: No.

[00:30:17.25] Rory: It's absolutely not.

[00:30:18.12] José: And what about that one.

[00:30:23.27] Inma: "Seeing the world in multiple"

[00:30:23.19] José: "and new perspectives"?

[00:30:26.21] José: That one is a complicated one because that could be part of state of mind. But then again, it could be not at all.

[00:30:34.01] Inma: I think we should stick with state of mind.

[00:30:35.17] José: Yea.

[00:30:35.17] Rory: Yea.

[00:30:36.25] Inma: Because that covers anything.

[00:30:36.03] Rory: Because we have to reduce them now because we basically put all of them here.

[00:30:40.20] Inma: These are limiting things so it's either solving a problem or it's something like that but you have a state of mind whenever you do anything, and that kind of covers.

[00:30:50.01] Rory: I think we should just start by taking away this that are low, we think these are more important because we have to get as less things as we.

[00:30:57.29] José: Were we meant to get just like one at the top?

[00:31:00.07] Inma: Just if it's possible.

[00:31:01.00] EO: As many as you feel comprehensively describes creativity.

[00:31:05.28] José: Hm hm.

[00:31:08.16] EO: Or 'succinctly' is a better way to put it.

[00:31:09.15] Inma: I think we should just keep the three we have.

[00:31:11.00] José: Yea.

[00:31:11.04] Rory: Yea.

[00:31:11.29] José: I was going to say the three look pretty good.

[00:31:13.05] Rory: Because this is how you can use creativity. It's not what creativity is.

[00:31:16.25] Inma: Yea, exactly, I agree.

[00:31:19.17] Rory: So, these three?

[00:31:20.04] Inma: Yea.

[00:31:21.08] Rory: OK.

[00:31:22.16] Inma: Because it could be anything. It could be while eating a cake.

[00:31:26.18] Rory: I'm leaving them in a pile.

[00:31:28.10] EO: Can I take a picture as it was before?

[00:31:29.11] Rory: Yea.

[00:31:29.11] Toni: Yea.

[00:31:34.25] José: Yea. Do we need these as well?

[00:31:36.12] EO: I won't take pictures of you.

[00:31:41.17] Rory: And then there was this too.

[00:31:44.05] José: Yea, this was in the 'unsure' pile.

[00:31:46.07] Inma: Yea. [laugh]

[00:31:48.06] Rory: This was absolutely no.

[00:31:48.13] Inma: [laugh]

[00:31:48.13] Toni: [laugh].

[00:31:50.13] José: Making something.

[00:31:51.06] Inma: [laugh].

[00:31:53.02] Rory: And this I think was here, something like this.

[00:31:54.26] José: Yea.

[00:32:11.01] EO: Is there anything else that's missing?

[00:32:15.19] Rory: Do you guys have some ideas to write down?

[00:32:19.11] José: No, unless we're going to rewrite a definition for those top three.

[00:32:21.04] Inma: Yea, I think you're just summing those three up.

[00:32:23.22] José: Yea.

[00:32:25.05] Inma: Well, I think we said natural and instinct is something that we haven't put in. Maybe that would be.

[00:32:30.18] José: Yea, natural and instinct rather than a forceful action.

[00:32:35.13] Inma: Because it's not necessarily a type of thinking.

[00:32:39.16] Toni: I think natural instinct should be added to these three.

[00:32:45.01] Inma: You could say a natural way of thinking.

[00:32:44.22] Toni: Yea.

[00:32:44.22] Inma: Because it's not necessarily a type of thinking.

[00:32:46.03] Rory: It's not something you learn to be, it's something you're born with.

[00:32:52.20] Inma: A type of thinking is thinking logically or thinking, em, thinking in some way, always, I don't know now, I can only think of logic!

[00:33:03.14] José: Yea, me too. I lost the words but I know what you mean.

[00:33:07.02] Inma: Or you could say thinking selfishly or something like that whereas creative is sort of something that kind of comes and then it goes.

[00:33:13.02] José: And it's more unintentional.

[00:33:13.21] Inma: Yea.

[00:33:14.21] José: As like, it doesn't really sound right but it's more unintentional rather than 'OK, I 'm going to do this'.

[00:33:20.26] Toni: It's not like solving a math problem where you're following steps.

[00:33:24.06] José: Yea, you take different steps.

[00:33:25.12] Inma: You might solve it differently. Sometimes, you might be a bit more creative.

[00:33:27.15] Toni: Yea.

[00:33:29.12] Inma: Yea.

[00:33:29.03] Rory: It's OK. We did this.

[00:33:32.09] EO: Is what you actually do important? Do other people have to like it?

[00:33:43.01] José: No, it's a creative process.

[00:33:43.01] Inma: I think it's personal opinion saying something is creative or not.

[00:33:43.01] Rory: It's your way of doing it. Maybe someone will say "I don't really like how you did that' but it's like how you [emphasis] do that.

[00:33:51.21] José: Then again, they're just ideas that you come up and based on what your assignment is, or even if there's no assignment, then who it's meant to please. If it's just yourself, then you just get lost in your thoughts and there is no limit to it, whatever. But if you're making a project, and you're thinking of new ideas, naturally then you're going to filter those to what the task actually is and then you're going to create something from there. But I think if it's just for yourself, then there's no limit. You're just lost in your thoughts.

[00:34:22.27] EO: In terms of looking at somebody else' creativity, how do you make a judgment whether it's very creative, a little bit creative or not creative at all?

[00:34:35.20] Inma: I think that's just personal opinion.

[00:34:36.21] José: Yea.

[00:34:37.20] Inma: With anything, you could say something is or isn't creative. It all depends on what you think.

[00:34:45.19] EO: So let's say somebody else has done something.

[00:34:49.00] Rory: It's not really something that a machine can say 'this is creative', 'this is not'. It's something that a person that looks at it and see who did it, say maybe 'yea, this is really creative, this is some way of doing it' or says 'this is how everyone did it but it's maybe still your own way of doing it'. So, it can be creative and unique or it can be creative and maybe not that unique.

[00:35:27.00] EO: I'm going to share another cartoon with you. Tell me what you think. And of course, you might want to talk about it in relation to your experiences here at the school.

[00:36:00.09] Rory: I think this guy here is doing the math problem is not really being creative. This is just like doing what you want instead of following instructions or something like that.

[00:36:13.12] José: It's kind of like being absent-minded in a way because like the teacher's job is obviously to teach them to teach the kids in this cartoon how to count or how to do addition and this kid is just not really following instructions, which is in a way preventing him from being creative but at the same time saying 8+6 is dinosaur is not really.

[00:36:34.05] Rory: You can be creative everywhere but it's actually a lot more difficult to be creative in math. That's like you have to follow some, you cannot do 2+2 equals 7. Ok, you're being creative but it's not being creative. It's just not following instructions. You cannot be as creative as you can be maybe in Art or Music or Theatre. It depends on what you're doing. Here it's just not following instructions and not following what you're were supposed to do.

[00:37:01.14] Inma: I wouldn't say creative is a solution to something. It's more of the process or the way something is done. So, having your final answer being something that you know isn't being creative. Well, I wouldn't classify it that s being creative.

[00:37:19.11] Rory: This is just a matter of correct or incorrect. Here you can judge if that is right or not.

[00:37:28.22] EO: Why do you think some people are more creative than others? Or is that true?

[00:37:36.04] José: I don't know if that is true like it's never being. I think people that are more closed-minded, who are taught to think a certain way, are less likely to think outside of the box and really come up with these ideas. But I think people who are raised to be open-minded and really accept everything are more likely to come up with ideas, not really come up with ideas, but think in that sort of way.

[00:38:01.24] Rory: Yea, I really agree because he said it's how you are raised that determines how you're going to be when you're grown up, when you're older. And if everybody is born with creative thinking but if when you grow up, you just don't use it at all, you're not supposed to use it, you just follow what everybody does, you don't develop it in your life so you think you don't have it but everybody has it. It's just a matter of developing it or not.

[00:38:37.20] Toni: I think that everybody can be equally creative but it really depends on how people decide to show that creativity. So some people might have creative ideas or might have an idea to solve a problem but they never really come to creating that solution or sharing that solution with somebody. So, I feel like some people could really have some creative ideas on the inside but they don't actually really share those with people so people get the feeling they're less creative than other people.

[00:39:27.21] Inma: I don't know if it's necessarily something you have been taught because at some point if you looked at it in the way that everyone is sort of not creative and then some people are, then who was like the first person to be creative. I don't know if that is something that kind of comes from yourself or if it's nature or nurture. You could argue anything but if it's something that comes naturally, then even if you are forced to think one way, then maybe being creative would stand out more as everyone has it.

[00:39:57.27] Rory: This has been said before, but it's not something you learn to do, you don't learn to be creative, you're just born with that and then it depends on how you develop it if you're maybe more creative or not. Maybe there are slightly changes also when you're born but everybody, if it develops it in the right way, can be creative in its own way.

[00:40:16.24] Toni: It's your own choice what you do with your own creativity. You can keep it to yourself or you can really make it open for people to see.

[00:40:26.00] Inma: But then again, if you're in school and if I think of when we were creative, it's when we were encouraged to be creative.

[00:40:30.24] Toni: Yep.

[00:40:33.11] EO: Ashe, what do you think? I am sorry if I ask you unexpectedly. Do you think creativity is something that you're born with or is it something you're allowed to become as you live your life?

[00:41:04.17] Ashe: It's allowed to become because always the creativity ideas is coming. For me, the creativity ideas is coming to me really suddenly and yea, I think it happens to everyone.

[00:41:26.03] EO: And do you think teachers have a big influence on your creativity?

[00:41:41.03] Ashe: Yea. I think if teachers says if you do something, if the teacher tell us every, all the process, what we need to do, maybe the creativity thing is not happen.

[00:42:06.10] Rory: I think teachers play a big role in it but also like your parents and the teachers when you're smaller play a really big role in your development of creativity.

[00:42:20.11] Toni: I feel like from starting on when we were young, teachers always like started already saying 'yea, be creative' in specific scenarios. So, I feel like in scenarios where teachers don't say 'be creative', you feel like you shouldn't really be creative. But I feel like that's just, especially in school, something that's being going on from the beginning on. So you're kind of not really sure if you can be as creative as you would like if the teacher doesn't tell you 'be creative'.

[00:43:06.16] EO: Do you think it varies in the school here how much teachers encourage creativity?

[00:43:15.27] Toni: Yea, for sure.

[00:43:17.01] EO: Do you think it varies from teacher to teacher?

[00:43:18.00] Toni: Yea.

[00:43:18.16] Inma: Oh, yea.

[00:43:18.18] Rory: And also from teacher, yea, maybe.

[00:43:21.12] Inma: And from subject to subject, it also makes a difference.

[00:43:23.19] EO: So regardless of the teacher, the subject.

[00:43:31.03] Rory: I think it depends on both things.

[00:43:31.16] Inma: Yea.

[00:43:31.23] Toni: It depends on both.

[00:43:31.23] EO: or a play between the both?

[00:43:32.24] Inma: Yea.

[00:43:33.29] Rory: For example, Theatre, we are supposed to have a journal of what we're doing, and he's saying 'be creative in your journal and don't just copy and paste or just write it in a computer and put it down. But in Math, the teacher would obviously never tell us be creative when taking your notes. It's just saying 'take your notes'.

[00:44:05.22] EO: OK, we'll finish it at that, because we have to! There are other things I would have loved to have asked you but that can be another time. This will probably be the last focus group with you. However, it's likely I would want to maybe interview you one to one, or maybe in pairs. I'm not sure which you'd prefer. Would you prefer one to one or?

[00:44:44.28] José: Pairs.

[00:44:45.21] Inma: Yea, to develop your ideas. It's not as much pressure on you.

[00:44:52.14] EO: OK, I won't be with everyone but I might do that and might even do a Skype. We can discuss that later on. Just a reminder, and no pressure, but there is a discussion forum, that I invited you all in. It would be great if you make comments but of course it's up to you. Don't be afraid to start your own. if the questions are boring, don't feel you have to answer them but maybe create your own thread. Thank you all very much, I really enjoyed listening to your thoughts. I would have loved to listen to them for longer.

[00:45:38.27] José: Thank you for having us and for the snacks!

[00:45:40.18] Inma: Yea.

[00:45:41.25] EO: Not at all, it means my bag has less weight for the way home.

# **Appendix Q:** Interview guide for FGA1

## Student Focus group 1: Questions and Prompts

1. **When I say the word 'creativity', what comes to your mind?**
   - Is creativity a good thing?
   - Is it valued at the school?

2. **What might creativity mean?**
   - 'Thinking out of the box'.
   - Making something original/novel/different/unique/innovative.
   - Having/Developing new ideas that are original/novel/different/unique/innovative.
   - Transforming a thought to something physical.
   - A product that is original/novel/different/unique.
   - Making something that is personal.
   - Tackling problems in an innovative way..
   - Using your imagination.
   - Expressing something personal.
   - A type of thinking.
   - A state of mind.
   - Seeing the world in multiple and new perspectives.
   - Making already existing ideas into new and unique versions.
   - Making a product that is original and worthwhile seeing.
   - Making something that is artistic or literary.
   - Is a thing without boundaries.
   - The ability of being able to show something unique and is unexpected but in a positive way.
   - Being able to integrate your own ideas and originality in a variety of different situations.

3. **When in school do you think you feel most creative?**
   - Why is this?
   - Do you think you can be creative in one class but not another?
   - Do you think you can be creative in one subject but not another?
   - Do you feel more creative in subjects you enjoy? (or vice-verca)
   - Has the teacher an effect?
   - Has the subject an effect?

4. **Do you think some people are more creative than others?**
   - Are some people creative and others not?
   - Why is this?

5. **What kind of activities or tasks encourage you to be creative?**
   - Are you 'taught' any skills that help you be creative?
   - How is your creativity encouraged?

6. **How do other people influence your creativity at school?**
   - For example, students?
   - For example, teachers?
   - For example, support staff?
   - For example,, administrators?
   - Other people?

7. **Do you think MYP assessment criteria value creativity?**

8. **Do you think teachers appreciate your creativity?**

9. **Does it mean the same for all subjects to be creative? (Are creativity skills transferable across subjects?)**

10. **Do you think people become more creative as they get older?**

11. **Why would someone want to be creative?**

12. **In the questionnaire, many mentioned the importance of teacher and peer feedback. What do you mean by this word 'feedback'?**
    - What are examples of feedback that encourage creativity?
    - What are examples of feedback that discourage creativity?
    - Is there a difference between feedback, judgment and advice?

# **Appendix R:** Interview guide for FGA2

## Student Focus group 2: Questions and Prompts

1. **Cartoons** – *Thought too far outside the box* and *In the box.* Other cartoons will be used throughout the focus group as appropriate.

2. **What might creativity mean – activity**

3. **Have teachers much of an impact on students' creativities?**

4. **Why are some people more creative than others?**
   - Are some people creative and others not?
   - Why is this?

5. **When in school do you think you feel most creative?**
   - Why is this?
   - Do you think you can be creative in one class but not another?
   - Do you think you can be creative in one subject but not another?
   - Do you feel more creative in subjects you enjoy? (or vice-verca)
   - Has the teacher an effect?
   - Has the subject an effect?

6. **What kind of activities or tasks encourage you to be creative?**
   - Are you 'taught' any skills that help you be creative?
   - How is your creativity encouraged?

7. **How do other people influence your creativity at school?**
   - For example, students?
   - For example, teachers?
   - For example, support staff?
   - For example,, administrators?
   - Other people?

8. **Do some teachers encourage your creativity more than others?**
   - Do they apply MYP assessment criteria differently?
   - Do teachers that encourage creativity more have a certain character?
   - Is the MYP year level you're in influence how your creativity is encouraged or is it more about the teacher?
   - Draw a teacher in the classroom who encourages creativity – activity.

9. **Do you think teachers appreciate your creativity?**
   - And administrators?

10. **Does it mean the same for all subjects to be creative? (Are creativity skills transferable across subjects?)**

11. **Why would someone want to be creative?**

12. **In the questionnaire, many mentioned the importance of teacher and peer feedback. What do you mean by this word 'feedback'?**
    - What are examples of feedback that encourage creativity?
    - What are examples of feedback that discourage creativity?
    - Is there a difference between feedback, judgment and advice?

# **Appendix S:** Sample of an amended interview guide (for FGT1)

## Teacher Focus group 1: Questions and Prompts

1. **When I say the word 'creativity', what comes to your mind?**
   - Is creativity a good thing?
   - Is it valued at the school?

2. **What might creativity mean?**
   Teachers came up with the following:

| | |
|---|---|
| the ability to come up with fresh ideas | Creativity is when unique solutions are designed. |
| For me, creativity is about approaching a task in a personal way and bringing an originality to the expression of the approach. | creating or finding solutions using ideas, objects, strategies or motions |
| Creativity is expression of a personal point of view, rooted in emotion and enhanced by unique skills and talents. | Creativity is the making of something new or the combining of existing ideas or things in different ways. |
| Exploring, experiencing, understanding, feeling and communicating in an individual way. | creativity allows people to use different approaches and ideas to develop or solve problems. |
| Creativity is a state of being where something new emerges from both the mind and the spirit. | |

WHAT IS A 'CREATIVE PRODUCT'?
IS THE PRODUCT IMPORTANT?

3. **When in school do you think students feel most creative?** WHAT'S REWARDED - PROCESS OR PRODUCT?
   - Why is this?
   - Do you feel more creative in subjects you enjoy? (or vice-verca)
   - Do you think students can be creative in one class but not another?
   - Do you think students can be creative in one subject but not another?

4. **Do you think some people are more creative than others?**
   - Are ~~some~~ people creative and others not?
   - Why is this?

5. **How do people influence student creativity at school?**
   - For example, teachers? You mentioned items such as rewards, fun, lack of judgement, uncertainty, teacher movement, classroom arrangement and displays, seeking alternative perspectives, safety, open-ended questions and tasks (incl homework), using words such as creativity and imagination, using phrases such as 'take a chance', 'there are no wrong answers' 'try again', 'how would that work it was finished?', 'what still needs to be done?', 'if you wouldn't have .... then what could you use instead?', 'what do you have available to work with?', 'have you tried doing it completely different?'. Resources were mentioned in various ways.
   - For example, students? Support staff? Administrators?
   - Other people?

6. **What kind of activities or tasks encourage students to be creative?**
   - You mentioned items such as open-ended tasks, real world, improvised, provision of choices (eg presentations).
   - Are students taught any skills that help them be creative?
   - How are students' creativities encouraged? DO STUDENTS FEEL REWARDED?

7. **Do you think MYP assessment criteria value creativity?**

8. **Do you think you or teachers in general appreciate creativity?**

9. **Does it mean the same for all subjects to be creative? (Are creativity skills transferable across subjects?)**

10. **Do you think students become more creative as they get older?**

11. **Why would someone want to be creative?** WHY FOSTER/ENCOURAGE CREATIVITY?

12. **In the questionnaire, many mentioned the importance of teacher and peer feedback. What do you mean by this word 'feedback'?**
    - What are examples of feedback that encourage creativity?
    - What are examples of feedback that discourage creativity?
    - Is there a difference between feedback, judgment and advice?

# **Appendix T:** Sample invitation letter for online discussion forum

**From:** **Eanna O'Boyle** eannaoboyle@mac.com
**Subject:** Creativity Research at
**Date:** 2 May 2016 at 15:45
**To:**
**Cc:** Eanna O'Boyle eob22@bath.ac.uk

EO

Dear Tom,

Greetings from Luxembourg and I hope all goes well with you during this busy time of the year.

First if all, many thanks for participating already in the research. I appreciate this very much. Now, I am wondering if you can participate further.

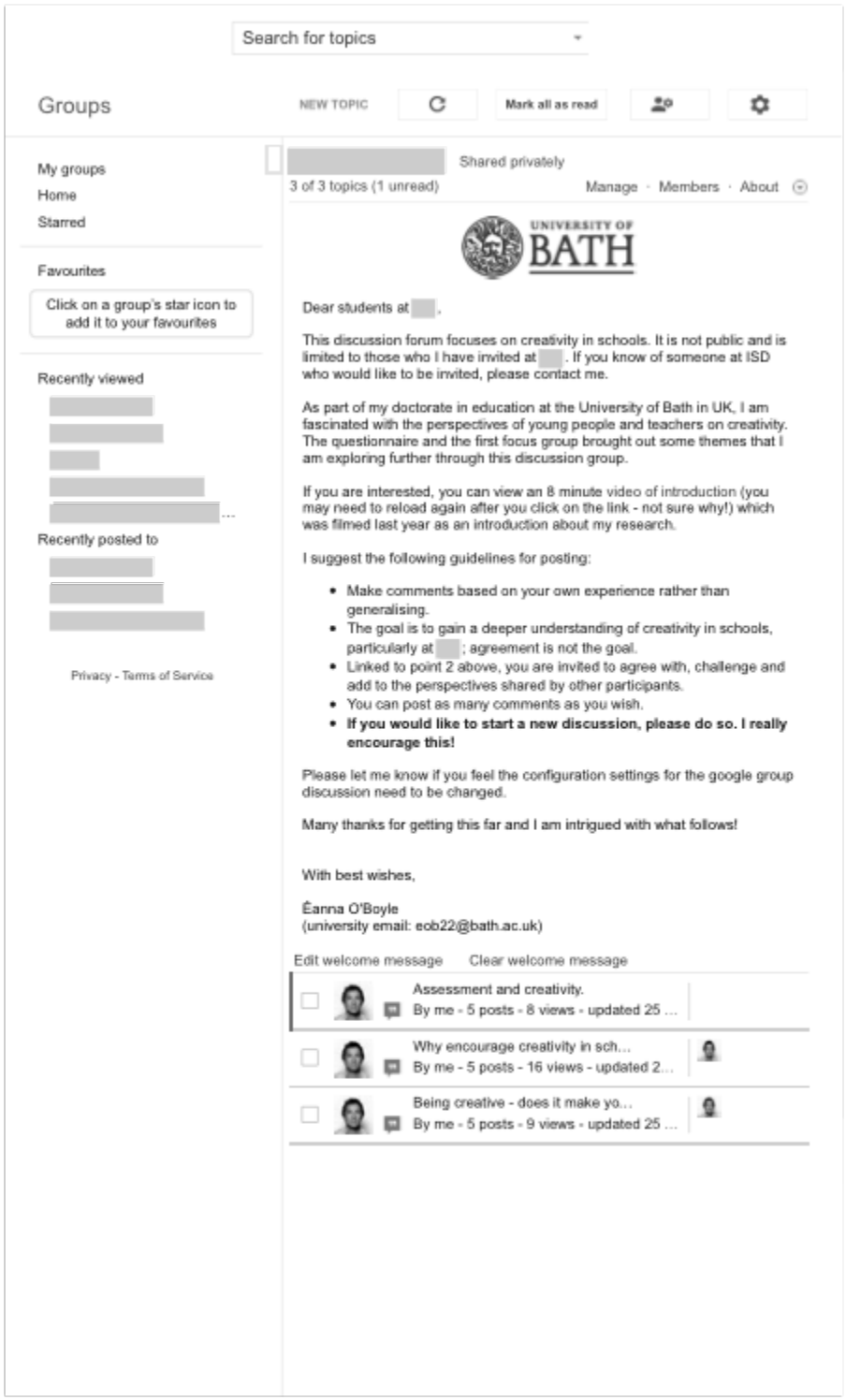
As part of my doctoral research on creativity, I have opened up a discussion forum on google groups. I have raised three discussions to start this off. You don't have to respond to all, or indeed any, of them. Most importantly, please feel free to start your own discussions! In that way, I get a feeling of what aspects of creativity in schools are important to you. These discussion groups will go on or as long as they are helpful, although I imagine they will finish by mid June when the school year ends.

You will soon receive an invitation from Google Groups and so I hope to hear from you soon!

With warm regards,

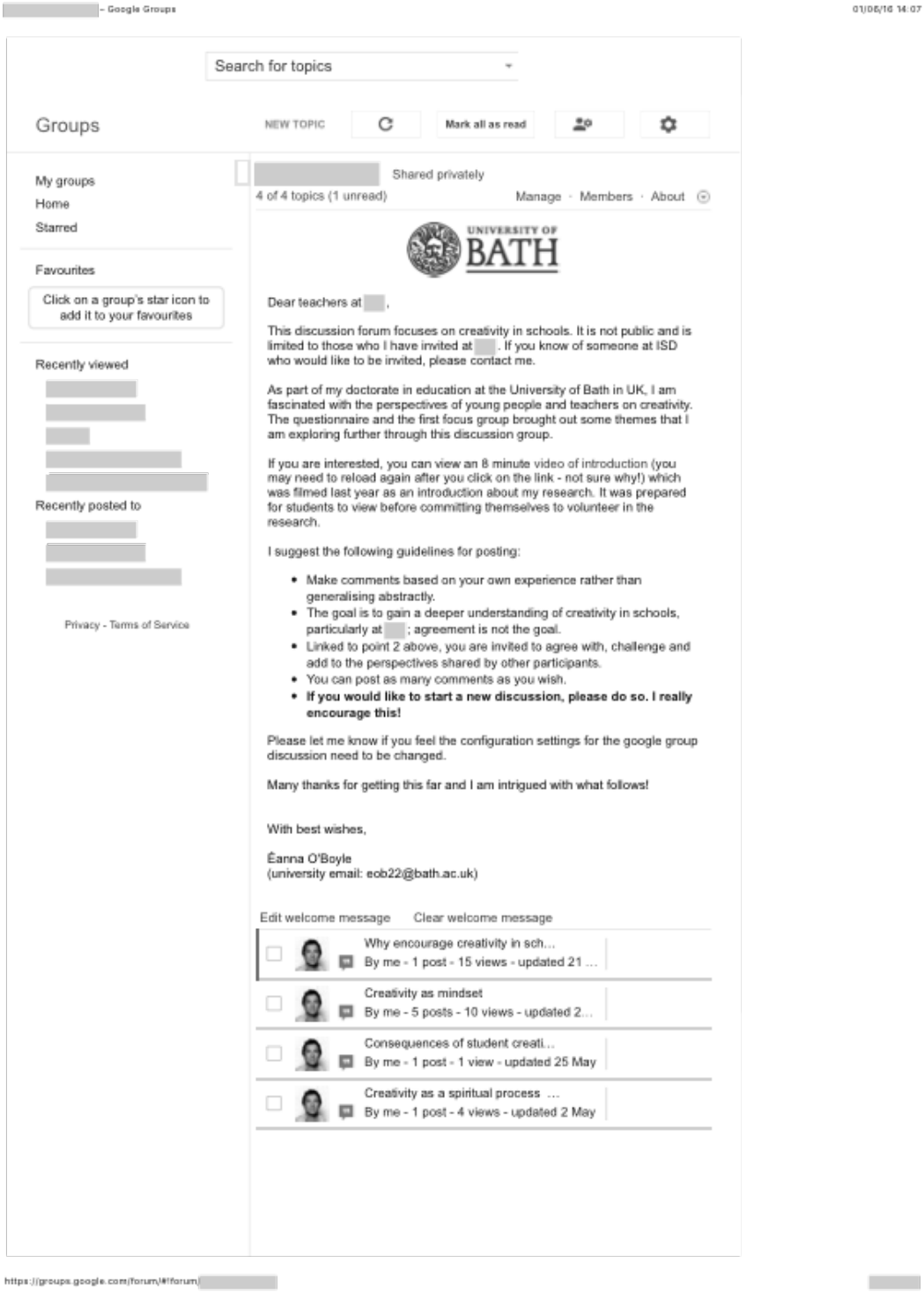
Éanna O'Boyle

# **Appendix U:** Adolescent online discussion forum homepage
(converted to greyscale)



# **Appendix V:** Teacher online discussion forum homepage

(converted to greyscale)



# **Appendix W:** Sample invitation letter for interviews

**From:** **Eanna O'Boyle** eannaoboyle@mac.com
**Subject:** Interview with you on Wed 15 June - please respond
**Date:** 8 June 2016 at 11:27
**To:** [redacted]

EO

Dear [redacted],

First of all, I greatly appreciate your contributions to my research on creativity. Thank you very much.

As mentioned in the last focus group session, I am planning to interview certain people from the focus groups. These will be either one-to-one or one-to-two interviews. I will be at [redacted] next week, Thursday 15 June. The interview will last about 30 minutes and will be quite open-ended. I will do my best to make the interview as comfortable and as enjoyable for you. For example I may give you things to look at or to do during the interview. As before, all information you share about creativity will be kept confidential with regard to who said what.

**I would like very much to interview you**. If you agree to the interview, would you prefer to meet with me on your own or with someone else? If you prefer to do the interview with someone else (could be grade 9 or 10), can you please suggest a few people from the focus groups that could join you (or perhaps there is someone you prefer to avoid)? If you do not mind who joins you, please let me know. All information you give me in your response to this email will be kept strictly confidential.

Can you please get back to me by Friday morning, 10 June, this week by the latest. That will give me time to plan for the day! Once I hear back from you, I will get back to you with more details.

To make it easier, you can respond to the email by answering the questions below:

***Do you agree to have an interview? Yes** or **No***

***If yes, would you prefer to be on your own or with someone else? On your own** or **With someone else** or **Don't mind***

***If with someone else, suggest names of people you would be happy to join with or who you would prefer to avoid?***

The names of people, with your name included, who attended the focus groups are as follows:

| *Surname* | *First Name* | *Grade* |
|---|---|---|
| [redacted] | [redacted] | *9* |
| [redacted] | [redacted] | *9* |
| [redacted] | [redacted] | *9* |
| [redacted] | [redacted] | *9* |
| [redacted] | [redacted] | *9* |
| [redacted] | [redacted] | *10* |
| [redacted] | [redacted] | *10* |
| [redacted] | [redacted] | *10* |
| [redacted] | [redacted] | *10* |
| [redacted] | [redacted] | *10* |
| [redacted] | [redacted] | *10* |
| [redacted] | [redacted] | *10* |
| [redacted] | [redacted] | *10* |

I look forward to hearing from you and wish you a successful end of school year.

Kind regards,

Éanna O'Boyle

# **Appendix X:** Individual/paired interview guide (adolescents)

### Student Interviews: Questions and Prompts

1. **How did you find participating in this research?**
    - Was it helpful for you in any way?
    - Was it worth it?
    - What would you like to see as a result of this research?
    - The research will have been worth it if…
    - Did the school support you being involved in this research? Teachers? Students? Administrators?
    - Did you feel safe to share your perspectives?
    - Did the school administration support your participation in the research?
    - Have your views on creativity been impacted during the research?

2. **The Creative Process:**
    - What are examples of tasks in which you were very creative?
    - Cartoon – *The Creative Process.*
    - Do students sometimes prefer to do the ordinary rather than the creative?

3. **Social Dimensions**
    - Are students tending to engage with the world around them, either socially or exploring man-materials in the man-made environment, during the creative process?
    - What is the motivation to be creative? To score high? To be praised by teacher and peers? To feel good? To feel like you did your best? To gain popularity?
    - Do you consider it a compliment to be considered creative?

4. **How do other people influence your creativity at school?**
    - Students? Teachers? Support staff? Administrators? Other people

5. **Teachers encouraging creativity?**
    - Do teachers apply MYP assessment criteria differently, even within subjects from year to year?
    - Do you think teachers appreciate your creativity? And administrators?
    - Describe the design (eg seating arrangement) of your classes?
    - Do teachers encourage peer-collaboration and peer-feedback?

6. **Subject-specific creativity?**
    - Does it mean the same for all subjects to be creative? (Are creativity skills transferable across subjects?)
    - Is it easier to be creative in some subjects (Art/Music/Theatre vs Maths)? Do non-Arts & Arts teachers agree?

7. **Aims of Creativity?**
    - Why would someone want to be creative?
    - Why encourage creativity?

8. **Assessment:**
    - Is it the subject or the teacher that most influences whether assessment criteria address creativity.
    - Is it possible to judge and assess creativity fairly?

9. **Terminology:**
    - Students are favouring certain words over others when it comes to 'developing' student creativity - developing, encouraging, educating for, teaching for, and wanting, but students are not using 'teaching' or 'fostering'. What is the word to use?

10. **Creativity outside Classroom?**
    - Outside of the MYP, what other forums or groups encourage the development of your creativity?

# **Appendix Y:** Post Interview notes

## Student Interviews: Questions and Prompts

1. **How did you find participating in this research?**
   - Was it helpful for you in any way?
   - Was it worth it?
   - What would you like to see as a result of this research?
   - The research will have been worth it if...
   - Did the school support you being involved in this research? Teachers? Students? Administrators?
   - Did you feel safe to share your perspectives?
   - Did the school administration support your participation in the research?
   - Have your views on creativity been impacted during the research?

SCHOOL SUPPORT ?

ARE YOU MORE CREATIVE AS A RESULT ?

2. **The Creative Process:**
   - What are examples of tasks in which you were very creative?
   - Cartoon – *The Creative Process.*
   - Do students sometimes prefer to do the ordinary rather than the creative?

FOLLOW ON ?

3. **Social Dimensions**
   - Are students tending to engage with the world around them, either socially or exploring man-materials in the man-made environment, during the creative process?
   - What is the motivation to be creative? To score high? To be praised by teacher and peers? To feel good? To feel like you did your best? To gain popularity?
   - Do you consider it a compliment to be considered creative?

4. **How do other people influence your creativity at school?**
   - Students? Teachers? Support staff? Administrators? Other people

5. **Teachers encouraging creativity?**

OWNERSHIP OF PRODUCT ?

   - Do teachers apply MYP assessment criteria differently, even within subjects from year to year?
   - Do you think teachers appreciate your creativity? And administrators?
   - Describe the design (eg seating arrangement) of your classes?
   - Do teachers encourage peer-collaboration and peer-feedback?

6. **Subject-specific creativity?**
   - Does it mean the same for all subjects to be creative? (Are creativity skills transferable across subjects?)
   - Is it easier to be creative in some subjects (Art/Music/Theatre vs Maths)? Do non-Arts & Arts teachers agree?

7. **Aims of Creativity?**

A POSITIVE THING !

   - Why would someone want to be creative?
   - Why encourage creativity?

8. **Assessment:**
   - Is it the subject or the teacher that most influences whether assessment criteria address creativity.
   - Is it possible to judge and assess creativity fairly?

9. **Terminology:**
   - Students are favouring certain words over others when it comes to 'developing' student creativity - developing, encouraging, educating for, teaching for, and wanting, but students are not using 'teaching' or 'fostering'. What is the word to use?

10. **Creativity outside Classroom?**
    - Outside of the MYP, what other forums or groups encourage the development of your creativity?

# **Appendix Z:** Sample letter to MYP Coordinator

**From:** **Eanna O'Boyle** eannaoboyle@mac.com
**Subject:** Yesterday's Visit to
**Date:** 9 March 2016 at 10:44
**To:**
**Cc:**

EO

Dear ,

Many thanks for spending time with me yesterday, showing the school, organising so many logistics and for making me feel so welcome. I'm very grateful. It was great meeting with the grades 9 and 10 students and the teachers, and I was very appreciative of their willingness to share their time and perspectives with me. I was also fortunate to meet, at short notice, with for a few minutes before leaving.

We will stay on contact. I really appreciated the welcome received from everybody starting from the friendly and efficient staff at the security desk, to reception, and all who I encountered during the day. I hope to return to the school to probe further the perceptions of staff and students and I will let you know about a time frame that would be ideal for this. I am hoping to return quite soon, within the next month, to conduct further focus groups and to also select people to interview one-to-one. I'll let you know as soon as I can.

Many thanks again and I look forward to a return to the school shortly.

With appreciation,

Éanna

# **Appendix AA:** Sample letter to teacher

**From:** **Eanna O'Boyle** eannaoboyle@mac.com
**Subject:** Thank you
**Date:** 16 June 2016 at 17:25
**To:** [redacted]

EO

Dear [redacted],

Thank you for your very generous and insightful contribution to the research, and for the samples of creativity in action. You opened my eyes to the world of creativity at [redacted].

I continue to bring together and analyse the data so that it can be helpful for the school and elsewhere. The interview with you helped clarify and confirm aspects about creativity at [redacted] as well as bring out some fresh perspectives. It will take a while to make sense of all of the contributions to the research but I think I'm getting there!

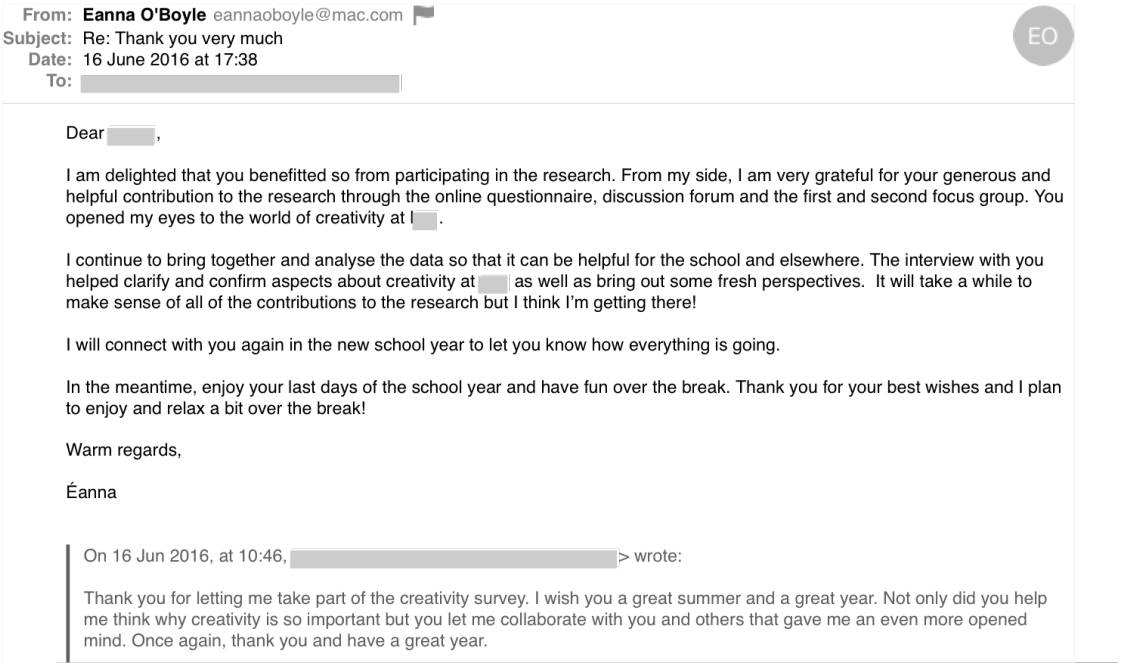
I will connect with you again in the new school year to let you know how everything is going.

In the meantime, enjoy your last days of the school year and have fun over the break.

Warm regards,

Éanna

# **Appendix AB:** Sample letter to student



From: **Eanna O'Boyle** eannaoboyle@mac.com
Subject: Re: Thank you very much
Date: 16 June 2016 at 17:38
To: [redacted]

EO

Dear [redacted],

I am delighted that you benefitted so from participating in the research. From my side, I am very grateful for your generous and helpful contribution to the research through the online questionnaire, discussion forum and the first and second focus group. You opened my eyes to the world of creativity at [redacted].

I continue to bring together and analyse the data so that it can be helpful for the school and elsewhere. The interview with you helped clarify and confirm aspects about creativity at [redacted] as well as bring out some fresh perspectives. It will take a while to make sense of all of the contributions to the research but I think I'm getting there!

I will connect with you again in the new school year to let you know how everything is going.

In the meantime, enjoy your last days of the school year and have fun over the break. Thank you for your best wishes and I plan to enjoy and relax a bit over the break!

Warm regards,

Éanna

> On 16 Jun 2016, at 10:46, [redacted] > wrote:
>
> Thank you for letting me take part of the creativity survey. I wish you a great summer and a great year. Not only did you help me think why creativity is so important but you let me collaborate with you and others that gave me an even more opened mind. Once again, thank you and have a great year.

# **Appendix AC:** Summary sent to participants

(converted to greyscale)

**RESEARCHER:** Éanna O'Boyle

**TITLE:** Adolescents' Perceptions of how Creativity is Fostered (Encouraged) by Teachers in the Classroom

**PURPOSE:**
The purpose of doing this research is to inform educators of the practices in classrooms that make young people feel they are being creative. More specifically, it aimed to offer suggestions to the school how creativity could be fostered. The four research questions were:

I. How do adolescents define creativity?
II. How do adolescents perceive creativity being fostered (encouraged) by teachers?
III. What are approaches to fostering creativity that are shared and recognised by teachers, adolescents, and creativity researchers.
IV. What are approaches to fostering creativity that are not shared and recognised by teachers, adolescents, and creativity researchers.

**METHODS USED TO COLLECT DATA:**
1. Online student questionnaire (38 students from grades 9 & 10; 13 agreed to participate further in the study).
2. Online teacher questionnaire (9 teachers of grades 9 and 10; 4 agreed to participate further in the study).
3. Student focus group with grades 9 and 10 combined.
4. Student focus group with grade 9 only.
5. Student focus group with grade 10 only.
6. Student online discussion forum.
7. Teacher online discussion forum.
8. Two teacher focus groups.
9. Student 1-to-1 interviews and a student paired interview.
10. Teacher 1-to-1 interviews.

**SEND ME AN EMAIL AT eannaoboyle@mac.com WITH YOUR FEEDBACK ON THIS SUMMARY, PLEASE!!**

It is important to note that the aim of the research was to bring out those themes that students felt were important to them (not mine or teachers). If they didn't discuss something, then I usually did not ask about it. I wasn't trying to prove anything. I attempted to come into the research with no preconceptions of how creativity should be encouraged in schools. Teachers were involved in the study to bring more meaning to these themes and to determine if different perceptions were held between students and teachers. I avoided telling teachers what students thought and vice-verca.

**SUMMARY OF FINDINGS:**

**I. How do grade 9 & 10 adolescents and teachers define creativity?**

| # | Students' perspectives | Teachers' perspectives |
|---|---|---|
| 1 | Ideally, creativity involves coming up with a new product, whether it be an idea or actual object. Process is important. | Similar although there was greater emphasis on the process component of creativity. |
| 2 | This product could be new or unique to the world, to the school, to the class or just to the creator him/herself. | Similar. Teachers brought up the issue of privacy. |
| 3 | This product is useful to at least one person (maybe just the creator so it doesn't have to be useful to other people). | Similar. |
| 4 | If you just come up with an idea but don't do anything with it, that involves creativity but not a lot of it. | Similar. There was discussion on the importance of both process and product, with emphasis on the former. |
| 5 | Creativity involves a type of thinking that is natural to everyone; however, this type of thinking often happened without you realising it. | Similar. Furthermore, there was discussion on whether some highly creative people can explain the process they underwent. |
| 6 | Creativity is something everyone has, and you can develop it a lot or a little. | Similar. |
| 7 | Being creative was more about having an attitude, 'state of mind' or mindset, and was less about having specific skills. Sometimes people are not aware of even having this mindset when they are being creative because it can become an automatic way of thinking. | Similar. In addition, there was uncertainty whether it was always possible for students to be able to describe what they did to be creative. |
| 8 | In general, creativity was not something that could be taught; rather you could be encouraged to be creative. | Teachers tended to give a broader meaning to what teaching involved. Thus, teachers could teach creativity while not necessarily telling students what to do or explicitly teach skills. |
| 9 | All subjects involved creativity; it wasn't confined to the Arts as is sometimes believed. | Similar. |
| 10 | Some subjects encouraged creativity more than others - this was due to the nature of the subject and the nature of the teacher. | Similar. |
| 11 | The creative process was different in different subjects although there was some overlap. | Similar, although there was less discussion on this. |
| 12 | Creativity was often seen, but not always, as about solving a problem. | Similar. |
| 13 | Creativity sometimes involved using pre-existing ideas. | Similar. |

### II. How do adolescents perceive creativity being fostered (encouraged) by teachers?

The grade 9 and 10 adolescents think that teachers have a major influence on how their creativities are encouraged, although both teachers and students recognised the importance of their families. Students preferred to use the terms 'encourage creativity' or 'help with creativity', rather than 'teach (for) creativity' or 'foster' creativity. While students voiced a rich variety of perspectives on a wide array of aspects of encouraging creativity, I felt that I could group these perspectives into four categories. In summary, the students in the study believed that teachers can encourage creativity in the following four ways:

A. Shaping **disciplinary** relevance (D) -
B. Shaping student **empowerment** (E)
C. Shaping personal or social **relevance** (R)
D. Shaping creative **metacognition** (M)

These four ways can be seen as boundaries which shape the process of encouraging creativity, as shown in figures 1 and 2. They are boundaries because there are limits to applying each of them. You can emphasise each too much and so reduce the quality of creativity.

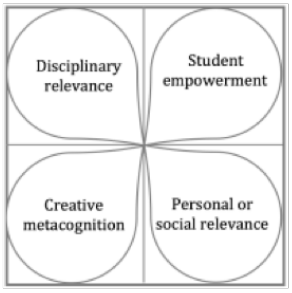



Figure 1: DERM Model for fostering creativity

or simply

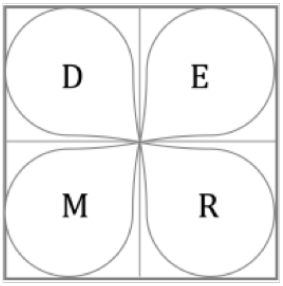



Figure 2: DERM abbreviated

The four boundaries represent four distinct but parallel approaches to fostering student creativity. Emphasising any one boundary will likely have an impact on the other boundaries. For example, empowering students will likely make learning more relevant on personal and social levels. Similarly, developing creative metacognition may deepen understanding of the disciplinary relevance of the activity or task.

A summary explanation now follows for each of the boundaries, and what students and teachers believed.

| Boundary | Students' perceptions | Teachers' perceptions |
|---|---|---|
| ***Shaping disciplinary relevance***<br><br>This means making sure that the class is studying the knowledge and skills of the subject.<br><br>Too much emphasis on shaping disciplinary relevance perhaps can lead to boredom for many students. | Creativity is both subject-specific and general. | Similar. However, not all teachers agreed that there were general creativity skills that could be applied to all subjects. |
| | Students understand that if they do not have sufficient subject knowledge, then they will likely struggle to be creative in that subject. It was difficult to be creative if you didn't know the subject matter or at least you wouldn't be rewarded if you were creative in a very general way. | Similar. |
| | Not all learning (including assessment tasks) has to involve creativity. There are times when it is better to avoid trying to be creative if it is not directly related to the subject. | Similar. This was discussed in significant depth. |
| | If teachers are encouraging creativity in a summative assessment task, then the subject's assessment criteria need to reward the creative application of the subject's knowledge and skills. | Similar. The dangers of summative assessment were discussed in that creativity could be reduced because a task was being scored by the teacher. |
| | Students feel that the assessment criteria in some subjects such as the Arts encourage creativity more than others. Nevertheless, they feel that the criteria in all subjects can apply to creativity (eg criterion B in mathematics). Some teachers try to apply creativity to at least some of the criteria and some tend not to. | Similar. Although there was greater importance attached to how teachers apply the criteria and how they would do so fairly. |

| Boundary | Students' perceptions | Teachers' perceptions |
|---|---|---|
| ***Shaping student empowerment*** | Students understand that feeling empowered does not mean having total freedom. | Similar. |
| | To be creative, students appreciate that they need boundaries such as timelines and deadlines, rules, a clear indication of what the process can be in a task, and parameters for demonstrating | Similar. There was significant discussion on this point. |

| | | |
|---|---|---|
| This means making sure that students have some degree of freedom with matters that are important to them.<br><br>Too much emphasis on shaping student empowerment perhaps can lead to shallow creativity for many students. | understanding in a final product (eg not being allowed to use PowerPoint in a presentation). | |
| | To be creative, students appreciate when they are consulted about the choices available in the process and product of classroom tasks. They appreciate being consulted on and having a 'voice'. | Similar, although there was limited discussion on this. |
| | Students appreciate having opportunities to decide who they talk with and when they do so in terms of seeking feedback from other students. Students also appreciate having the choice to be alone. | Similar. The final point was discussed more. |
| | Students appreciate when the products of their creativity remain owned by the student. As an example, it was mentioned that they like to have a say where their poster is placed in the wall. | This was more discussed in light of the Personal Project, but less with regard to other products. |
| | Students feel empowered when they think a teacher sees them as people worth knowing. For example, students appreciate teachers who genuinely listen to them if they have a concern about how some element of their creative product will be assessed. | Similar, although the last point was not brought up. |

| **Boundary** | **Students' perceptions** | **Teachers' perceptions** |
|---|---|---|
| ***Shaping personal and social relevance***<br><br>This means making sure that students find the subject relevant at an emotional level.<br><br>Too much emphasis on shaping personal or social relevance perhaps can lead to going off topic for many students | To be creative, students feel that tasks need to have personal relevance and sometimes they also need to feel that their efforts will have a social impact. | Similar. |
| | Connected with above is the need for teachers to appreciate how social recognition and genuine praise, when said honestly, encourage creativity. Students feel good when the teacher or their peers praise them. | Similar, although teachers talked less about praise and more about sharing constructive feedback. |
| | Students feel that other students appreciate creativity in others and praise it spontaneously. Creativity seems to be held in high esteem amongst students. | Similar. Teachers also felt that creativity was a good thing and that it was valued by students. |
| | Students appreciate when they have an opportunity to share what they have creatively done. | Similar. |
| | Students feel that one important aim of encouraging creativity is to develop their self-esteem and well-being. Being creative gives a feeling of satisfaction. | Similar, although teachers discussed more the need of society to have creative people in the workplace. |

| **Boundary** | **Students' perceptions** | **Teachers' perceptions** |
|---|---|---|
| ***Shaping creative metacognition***<br><br>This means helping students know i) what creativity means in the subject, ii) what their creative strengths and weaknesses are, and iii) when, where, how and why to be creative. It involves students having discussions about creativity, seeking, giving and receiving feedback, trial and error, self/peer-assessment, and task-clarifications.<br><br>Too much emphasis on shaping creative metacognition can perhaps lead to procrastination for many students. | Students appreciate having an opportunity to discuss what creativity is and what it involves. They feel it helpful to hear various perspectives, to continuously question their own perceptions, and to be open to changing their opinions as a result of these dialogues. The students felt that having the opportunity to discuss creativity during the study has led to a greater awareness of how creativity can be applied to their learning. | Similar. |
| | Students feel it can be helpful to have regular feedback from teachers on how creative they are. This feedback needs to be honest but not too harsh or too soft. It needs to be encouraging. It could include the teachers suggesting something (eg a dance move). This continuous feedback helps students be able to self-assess their creativity more accurately. | Similar. There was greater emphasis on what this constructive feedback would look like. There was discussion on giving perspectives instead of judgments and with scaffolding these perspectives accordingly. |
| | Similarly, students need opportunities to gain feedback from other students. For example, students need time near the beginning of a creative task to share their ideas with their peers so that they can see if their ideas are worth pursuing. They also appreciate time near the end to edit their final piece based on feedback from the teacher and peers. | Similar, although there was no discussion on the last point mentioned. |
| | Students feel they can learn more about what creativity is and involves if they can see examples of it around them, for example in their teachers. | Similar. |
| | While students find it helpful to see high quality assessment samples from previous years, they also like to see a diversity of ways to do them because of how they can open up creative possibilities. | Similar. Through discussion, teachers also saw the value of exemplars as illustrating possibilities. |
| | Students appreciate spaces for asking questions to others so that they gain and give feedback (both of which presumably can help develop their creative metacognition). | Similar. |
| | Students need time to be creative. That's why extended projects stimulate creativity. | Similar. |
| | Students appreciate when teachers discuss how they can be creative in a task when introducing it to the class. Discussing this motivates students to think about how they can be creative as well as explain what being creative means in that subject. | Similar. Less discussion on how a teacher introduces a task. |

Shaping these four boundaries are all important for encouraging creativity. The possible impact of emphasising only three of them are suggested below in figure 1:

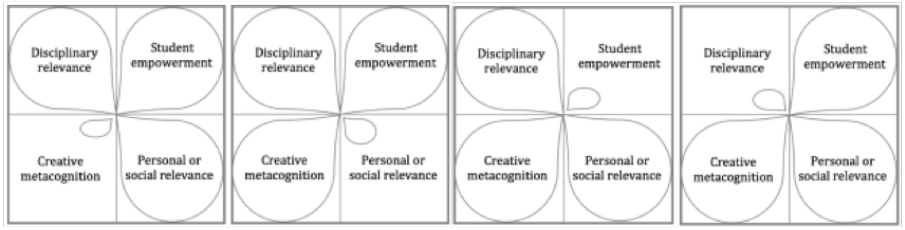
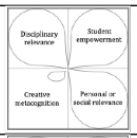
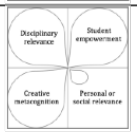
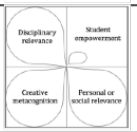
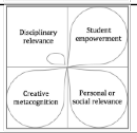



*Figure 1: Types of creativity as a result of emphasising 3 out of 4 boundaries*

This set of diagrams in figure 1 is explained in the table below:

| Boundaries emphasised | Model | Boundary not emphasised | Creativity that may occur | Effect |
|---|---|---|---|---|
| DER |  | M (creative metacognition) | *Shot in the dark* creativity | When there is little emphasis on students developing creative metacognition, there is a danger that they will think they are being creative when they are not. |
| DEM |  | R (personal and social relevance) | *Pointless* creativity | When there is little emphasis on the personal and social aspects of learning, there is a danger that they will be disconnected from what they are doing, they will feel bored and they will have little interest in being creative. |
| DRM |  | E (student empowerment) | *Submissive* creativity | When there is little emphasis on empowering students, there is a danger that they will either obey the rules blindly without understanding or they will rebel against them. Either way, they will find it difficult to be creative. |
| ERM |  | D (disciplinary relevance) | *Out of bounds* creativity | When there is little emphasis on students learning deeply about the subject, there is a danger that they will not learn to apply creativity to the subject. They may only use creativity in a very general, artistic or uncoordinated way. |

**CONCLUSION**

The DERM model originates in what student participants said. While they did not directly come up with this model or the four boundaries, I interpreted their perceptions in this way. Indeed, I took it as my responsibility to make as much sense of what was shared with me and to come up with a 'mini-theory' that was grounded in the data (and not my own opinions or that of other researchers). As indicated, the viewpoints of student and teacher participants were very similar so to some degree, the model also represents the perceptions of teachers. I am aware that the sample of students and teachers may not be a representative sample. Finally, while research into adolescent creativity is limited, especially in international schools, I believe the relevant literature can support the model.

The DERM model proposes four critical elements of fostering creativity. It is an inclusive model in four ways - it is all or nothing (all four boundaries need to be shaped), it applies to all students and teachers, it applies to all subjects, and it is part of the curriculum rather than an add-on. There are occasions when it would be unwise for students to apply creativity to situations and problems, and other times it would be helpful to apply it to deepen and show understanding.

My sincere thanks to the school, , for facilitating this research in many different ways. I am forever indebted to the students and teachers who shared their perceptions in such generous ways, and as a result opened up my mind to the world of creativity. I have learned a tremendous amount from you.